

BULLETIN

OF

MISCELLANEOUS INFORMATION.

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DLXXV.—DIAGNOSES AFRICANÆ, X.

The following descriptions include some of the novelties contained in several important collections recently received at Kew. That of Dr. Forsyth Major, amounting to 575 species was made in Central Madagascar, an area in which he had been preceded by the Rev. R. Baron; the proportion of new species found was consequently not so great as it would otherwise have been. Mr. G. L. Bates has sent several small collections from the Cameroons region, and although he has not penetrated far into the interior, he has succeeded in discovering a number of previously undescribed plants. Sir Harry H. Johnston, late H.M. Commissioner in British Central Africa, has transmitted to Kew the extensive and important collections made by Mr. Alexander Whyte, Head of Scientific Department, Zomba. A large portion of these were made in North Nyasaland, a country which had never previously been explored botanically.

418. *Cleome epilobioides*, Baker [Capparideæ]; ad *C. monophyllum*, Linn., magis accedit.

*Herba* erecta, gracilis, pubescens. *Folia* sessilia, lanceolata, acuta, integra, ascendentia, inferiora  $1\frac{1}{2}$ –2 poll. longa, superiora valde reducta. *Flores* axillares, solitarii, pedicellis 3–6 lin. longis, fructiferis patulis. *Sepala* lanceolata, dense pubescentia, 2 lin. longa. *Petala* obovata, longe unguiculata, lilacina, calyce paulo longiora. *Stamina* 8–10, calyci æquilonga. *Capsula* linearis, 2–2 $\frac{1}{2}$  poll. longa, pubescens, crebre longitudinaliter nervata, ad basin sensim angustata, valvis a placentis demum discretis. *Semina* curvata, pallide brunnea, glabra, rugis transversis ornata.

BRITISH CENTRAL AFRICA. Plains of Zomba, alt. 2500–3500 ft., Whyte.

419. *Pittosporum oblongifolium*, C. H. Wright [Pittosporeæ]; arborescens, foliis oblongis glabris chartaceis, cymis paucifloris.

*Arbor parva. Folia* integra vel obscure dentata, glabra, 7 poll. longa,  $2\frac{1}{2}$ –3 poll. lata; petioli  $\frac{1}{2}$ -poll. longi. *Cymæ* terminales, paucifloræ. *Sepala* 2 lin. longa, rotundata, valde imbricata, minute fimbriata. *Petala* oblonga, quam sepala sesquilingiora, viridilutescentia. *Filamenta* brevია; antheræ oblongæ; connectivum supra in appendicem scariosam productum. *Ovarium* globosum, placentis 3 pluriovulatis; stylus filiformis, stigmatе subpeltato.

WEST TROPICAL AFRICA. Efulen, Cameroons, *Bates*, 432.

The oblong leaves are much larger and less coriaceous, and the cymes bear fewer flowers than in any other African species.

420. *Pittosporum malosanum*, *Baker* [Pittosporæ]; ad *P. abyssinicum*, Del., et *P. viridiflorum*, Sims, arcte accedit.

*Frutex* vel arbor parva. *Rami* graciles, juniores pubescentes. *Folia* breviter petiolata, oblanceolato-oblonga, acuta vel obtusa, subcoriacea, glabra, 2–8 poll. longa, ad basin sensim attenuata. *Paniculæ* densæ, terminales, corymbosæ, ramulis pubescentibus, pedicellis calyce sæpe longioribus. *Calyx* campanulatus, pubescens, 1 lin. longus, lobis ovatis obtusis, tubo brevissimo. *Petala* oblanceolata, obtusa, flavo-brunnea,  $2\frac{1}{2}$  lin. longa. *Stamina* petalis paulo breviora, filamentis antheris longioribus. *Fructus* ignotus.

BRITISH CENTRAL AFRICA. Mount Malosa, near Zomba, alt. 4000–6000 ft., *Whyte*.

421. *Hibiscus* (*Bombycella*) *Carsoni*, *Baker* [Malvaceæ]; ad *H. micranthum*, Linn., et *H. petræum*, Hiern, accedit.

*Herba* perennis, sesquipedalis vel bipedalis. *Caulis* erectus, gracilis, setis stellatis appressis scaber. *Folia* obscure petiolata oblanceolato-oblonga, obtusa, 3– $3\frac{1}{2}$  poll. longa, subcoriacea, ad basin rotundata, dimidio superiore crenata, infra medium trinerata. *Panicula* laxa, elongata, ramulis brevibus erecto-patentibus ad apicem sæpissime trifloris. *Bracteæ* epicalycis 6, lineares, appressæ, calyce duplo breviores. *Calyx* 4 lin. longus, tubo brevi, lobis lanceolatis. *Petala* cuneata, coccinea, 9–10 lin. longa, dorso pilosa. *Stylus* petalis paulo brevior. *Carpella* dense pilosa.

BRITISH CENTRAL AFRICA. Fort Hill, Nyasa-Tanganyika plateau, alt. 3000–4000 ft., *Whyte*; Fwambo, Lake Tanganyika, alt. 5000–6000 ft., *Carson*. Cultivated at Kew in 1896 from seeds sent by Mr. Kenneth J. Cameron.

422. *Dombeya tanganyikensis*, *Baker* [Sterculiaceæ]; ad *D. bruceanam*, A. Rich., magis accedit.

*Rami* lignosi, graciles, glabri, teretes. *Folia* longe petiolata, cordato-orbicularia, cuspidata, crenata, 3–4 poll. longa et lata, utrinque dense pubescentia. *Panicula* terminalis, ampla, corymbosa, ramis multifloris erecto-patentibus simpliciter umbellatis vel furcatis; bracteæ ante anthesin caducæ, pedicellis pilosis 3–4 lin. longis. *Sepala* lanceolata, acuminata,  $4\frac{1}{2}$ –5 lin. longa, dorso pubescentia. *Petala* cuneata, rubella, persistentia, demum scariosa, sepalis æquilonga. *Stamina* basin



coalita ut cupulam ovario æquilongam efficiant; staminodia 5, clavata, petalis paulo breviora. *Ovarium* globosum, dense pilosum.

BRITISH CENTRAL AFRICA. Fort Hill, Nyasa-Tanganyika plateau, alt. 3000–4000 ft., *Whyte*.

423. *Hermannia nyasica*, *Baker* [Sterculiaceæ]; ad *H. glanduligeram*, K. Schum., et *H. arabicam*, Harv. et Sond., magis accedit.

*Suffrutex* ramosissimus. *Rami* graciles, lignosi, teretes, dense glanduloso-pubescentes. *Folia* minuta, sessilia, linearia, integra, dense glanduloso-pubescentia. *Flores* solitarii, axillares, pedicellis 2–5 lin. longis. *Calyx* dense glanduloso-pubescent, 2 lin. longus, tubo brevi campanulato, dentibus lanceolatis. *Petala* lanceolata, rubella, calyce vix longiora. *Antheræ* lineares, stramineæ, 2 lin. longæ, loculis apiculatis. *Stylus* 2 lin. longus. *Carpella* pubescentia, oblonga, 2 lin. longa, cuspidibus brevibus erecto-patentibus instructa.

BRITISH CENTRAL AFRICA. Monkey Bay, Lake Nyasa, alt. 1700 ft., *Whyte*.

424. *Hermannia erecta*, *N. E. Brown* [Sterculiaceæ]; *H. denudata*, Linn. fil., similis, sed indumento facile distinguitur.

*Frutex* ramosa. *Rami* erecti, stricti, brunnei, pilis minutis stellatis vestiti inter quos etiam pili magni stellati irregulariter interspersi patent. *Folia* ascendentia, breviter petiolata; petiolus  $1\frac{1}{2}$ –2 lin. longus; lamina  $\frac{3}{4}$ – $1\frac{1}{4}$  poll. longa, oblanceolata subabrupte acuta, basi longe cuneata, integra, apicem versus serrata, utrinque pilis fasciculatis vel stellatis pubescens; stipulæ 3–5 lin. longæ,  $\frac{1}{2}$ –1 lin. latæ, lanceolatæ, acuminatæ. *Flores* subfasciculati; fasciculi 2–4-flori secus partem terminalem ramorum dispersi. *Bracteæ* inferiores lineari-lanceolatæ vel lineares, superiores et bracteolæ  $1\frac{1}{2}$ –2 lin. longæ, subulatæ. *Pedunculi* et pedicelli tomentosi, hi 1–2 lin. longi, illi  $\frac{1}{4}$ –3 lin. longi. *Calyx*  $2\frac{1}{4}$ – $2\frac{1}{2}$  lin. longus et latus, subgloboso-campanulatus, usque ad  $\frac{1}{3}$  quinque-dentatus, stellato-tomentosus, dentibus late deltoideis acuminatis. *Petala*  $3\frac{3}{4}$  lin. longa, 2 lin. lata, unguiculata; limbus subobliquus, late oblongus, apice subtruncatus, glaber; unguis convoluto-tubulosus, marginibus minute stellato-ciliatus. *Stamina* inclusa; filamenta  $2\frac{1}{3}$  lin. longa,  $\frac{3}{4}$  lin. lata, oblonga, acuta, fere ad medium connata; antheræ 1 lin. longæ, oblongæ, apice minute bifidæ. *Ovarium* oblongum, pentagonum, stellato-tomentosum, stylo tereto glabro.

TRANSVAAL. Kaap Valley, Barberton, 2100 ft., April, *Galpin*, 1346.

425. *Hermannia depressa*, *N. E. Brown* [Sterculiaceæ]; *H. Woodii*, N. E. Br. propinqua, sed minus tomentosa, foliis et stipulis minoribus differt.

*Rami* prostrati, 6–18 poll. longi, subflexuosi, brunnei, glanduloso-pubescentes, interdum per partes pilis stellatis parce obtecti. *Folia* patentia; petiolus 1–2 lin. longus; lamina  $\frac{1}{2}$ – $1\frac{1}{2}$  poll. longa



$\frac{1}{4}$ –1 poll. lata, oblongo-ovata, obtusa, basi cordata vel late rotundata, marginibus plus minusve irregulariter crenato-dentata, supra glabra, subtus plus minusve glanduloso-pubescent vel rarisime in venis pilos stellatos paucos gerens. *Stipulae* 1–1 $\frac{1}{2}$  lin. longae,  $\frac{3}{4}$ –1 lin. latae, ovatae, acutae. *Pedunculi*  $\frac{1}{2}$ –1 $\frac{1}{2}$  poll. longi, axillares, biflori. *Bractee* 1 $\frac{1}{2}$ –2 lin. longae, ut cucullum bifidum conficiant connatae. *Pedicelli* 2–11 lin. longi, inaequales. *Calyx* 2–2 $\frac{1}{2}$  lin. longus, campanulatus, usque ad medium 5-lobus; lobi deltoidei, acuti; ii utrinque et pedunculus et pedicellus glanduloso-pubescentes. *Petala* 3–4 lin. longa, 1 $\frac{1}{2}$ –2 lin. lata, cuneato-obovata, obtusa, glabra, aurantiaca. *Stamina* inclusa; filamenta medio utrinque tuberculata, dorso hirta. *Ovarium* obovoideum, glanduloso-pubescent, stylo parce hirta. *Capsula* subglobosa; semina glabra.—*Mahernia erodioides*, var. *latifolia*, Harv. in *Harv. & Sond. Fl. Cap. I.*, 214.

SOUTH AFRICA. Griqualand East: mountains around Kokstad, 4500 ft., *MacOwan*, *Herb. Aust.-Afr.*, 1412. Natal: near Umlaas River, 2000 ft., *Wood*, 1828; near Pietermaritzburg, *Sanderson*; near Port Natal, *Sutherland*; and without precise locality, *Gerrard*. Prince Albert Div.: between the great Zwarte Bergen and Kandos Berg, 2000–3000 ft., *Drège*, 7309. Albert Div.: near Braam Berg, *Cooper*, 1361. Basutoland, *Cooper*, 2007, 2010. Orange Free State: Bloemfontein, *Rehmann*, 3905; Sand River, *Burke*, 400. Transvaal: Mooi River, *Nelson*, 333; plains around Barberton, 2800 ft., *Galpin*, 1080.

426. *Geranium vagans*, *Baker* [Geraniaceae]; ad *G. simense*, Hochst., magis accedit.

*Herba* perennis. *Caules* decumbentes, pubescentes, graciles. *Folia* breviter petiolata, ad basin trifida, pubescentia, 9–12 lin. lata, segmentis pinnatis, lobis linearibus uninerviis; stipulae parvae, lanceolatae, scariosae. *Pedunculi* erecti, graciles, elongati, biflori, bracteis 3 minutis lanceolatis mucronatis, pedicellis elongatis cernuis. *Sepala* lineari-oblonga, 3 lin. longa, conspicue mucronata, dorso dense pubescentia. *Petala* integra, cuneata, 2 lin. lata, calyce paulo longiora. *Stamina* calyce paulo breviora. *Rostrum* fructiferum 7–8 lin. longum; stylus carpellaeque pubescentes.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft., *Whyte*.

427. *Pelargonium Whytei*, *Baker* [Geraniaceae]; ad *P. alchemilloides*, Willd., et *P. multibracteatum*, Hochst., accedit.

*Herba* perennis, pedalis vel sesquipedalis. *Caules* ascendentes, graciles, parce pilosi. *Folia* breviter petiolata, parce pilosa, trifida, segmentis obovato-cuneatis 1–1 $\frac{1}{2}$  poll. longis profunde crenatis; stipulae parvae, ovatae, acutae, scariosae. *Pedunculi* elongati, ascendentes, 2–4-flori, bracteis 4–5 lanceolatis cuspidatis pubescentibus; pedicelli 4–6 lin. longi. *Sepala* lanceolata, cuspidata, pubescentia, 4 $\frac{1}{2}$  lin. longa. *Petala* oblanceolata, rubra, calyce paulo longiora. *Rostrum* fructiferum dense pilosum; lobi stigmatici 5, subulati, glabri.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 7000 ft., *Whyte*, 244.



428. *Impatiens zombensis*, Baker [Geraniaceæ-Balsamineæ]; ad *I. capensem*, Thunb., arcte accedit.

*Caules* graciles, erecti, sursum parce pilosi. *Folia* breviter petiolata, oblonga, acuta, membranacea, 2–3 poll. longa, argute serrata, facie glabra, dorso pubescentia, basi petioloque setis paucis glanduliferis prædita. *Pedunculi* axillares, elongati, erecti, simplices vel furcati. *Petala* parva, violacea; calcar curvatum, 1 poll. longum, tenue, e basi subulatum. *Ovarium* cylindricum, glabrum.

BRITISH CENTRAL AFRICA. Plateau of Mount Zomba, alt. 5000–6000 ft., Whyte.

429. *Ochna longipes*, Baker [Ochnaceæ]; ad *O. macrocalycem*, Oliv., accedit.

*Arbor* glabra, ramulis gracilibus. *Folia* alterna, sessilia, oblongo-lanceolata, acuta vel acuminata,  $2\frac{1}{2}$ –3 poll. longa, 9–12 lin. lata, dentata, basi cuneata, modice firma, utrinque glabra, saturate viridia. *Racemi* brevissimi, axillares, pauciflori, pedunculo brevissimo, pedicellis gracillimis glabris 6–9 lin. longis. *Sepala* post anthesin viridia, lineari-oblonga, chartacea, 5–6 lin. longa. *Stamina* calyce duplo breviora. *Carpella* 5, globosa, glabra; stylus 2 lin. longus, apice stigmatosus, integer, capitatus.

BRITISH CENTRAL AFRICA. Mount Malosa, near Zomba, alt. 4000–6000 ft., Whyte.

430. *Ochna shirensis*, Baker [Ochnaceæ]; ad *O. macrocalycem*, Oliv., etiam accedit.

*Arbor* glabra, ramulis lignosis virgatis. *Folia* brevissime petiolata, oblongo-lanceolata, acuta, 2–3 poll. longa, basi cuneata, denticulata, firmula, utrinque viridia glabra. *Racemi* axillares, simplices vel basi furcati, breviter pedunculati, pauciflori vel multiflori, pedicellis gracilibus 6–9 lin. longis. *Sepala* post anthesin lineari-oblonga, pallide brunnea, 4–4½ lin. longa. *Stamina* sepalis duplo breviora, antheris parvis oblongis per longitudinem totam dehiscentibus. *Carpella* 5, globosa; stylus integer, apice stigmatosus, capitatus.

BRITISH CENTRAL AFRICA. Mount Zomba and Mount Malosa, alt. 4000–6000 ft., Whyte.

431. *Gymnosporia ferruginea*, Baker [Celastrineæ]; pedunculis solitariis haud furcatis.

*Frutex* inermis. *Rami* virgati, lignosi, pubescentes. *Folia* alterna, breviter petiolata, oblonga, 2–3 poll. longa, obtusa, integra, rigide coriacea, facie obscure, dorso conspicue ferrugineo-pubescentia. *Racemi* densi, pauciflori, axillares; pedunculi breves, foliis multo breviores, pedicellis brevibus pubescentibus; bracteæ lanceolatae, pilosæ. *Calyx* parvus, campanulatus, dense pilosus, dentibus 5 deltoideis. *Petala* 5, oblonga, obtusa,  $\frac{3}{4}$  lin. longa. *Stamina* petalis breviora. *Fructus* ignotus.

BRITISH CENTRAL AFRICA. Mount Zomba, alt. 4000–6000 ft., Whyte.

432. *Lasiodiscus marmoratus*, C. H. Wright [Rhamnaceæ]; arborescens, ramis junioribus dense ferrugineo-tomentosis, foliis basi rotundatis.

*Arbor* parva. *Rami* petioli pedunculique pilis ferrugineis vestiti. *Folia* ovato-oblonga, acuminata, basi rotundata, breviter petiolata, obscure serrata, chartacea, supra glabra, subtus ad nervos minute pubescentia, 9 poll. longa,  $5\frac{1}{2}$  poll. lata, nervis siccitate albis. *Paniculae* axillares, 6 poll. longæ, multifloræ. *Flores* 3 lin. diam. *Calycis* lobi triangulares, valvati, extus tomentosi, per anthesin reflexi. *Petala* alba, cucullata, quam sepala multo minora. *Stamina* 5, petalis velata. *Discus* magnus, annularis, ovarium obtegens. *Ovarium* triloculare, ovulis in quoque loculo solitariis; stylus trilobatus.

WEST TROPICAL AFRICA. Efulen, Cameroons, Bates, 358.

This can be at once distinguished from *L. Mannii*, Hook. fil., by the dense rusty tomentum on the younger branches and petioles and by the rotundate bases of the leaves. The veins on the upper side of the leaf are conspicuous by their whiteness, at least when dry.

433. *Vitis* (*Cissus*) *variifolia*, Baker [Ampelideæ]; ad *V. congestam*, Baker, accedit.

*Caules* validi, flexuosi, pubescentes, cirrhis haud obviis, internodiis superioribus 2–3 poll. longis. *Folia* sessilia, 1–3-foliolata; foliola oblanceolato-oblonga, subacuta, supra basin crenata, 6–9 poll. longa, supra medium 2–2½ poll. lata, subcoriacea, facie scabra, dorso pubescentia, e medio ad basin sensim angustata; stipulæ magnæ, foliaceæ, persistentes, ovato-acuminatæ. *Panicula* terminalis, sessilis vel pedunculata, 2 poll. diam., ramis pubescentibus, pedicellis brevibus. *Calyx* campanulatus, minutus, pubescens, dentibus 4 parvis latis. *Corolla* 1 lin. longa, viridis, medio constricta, petalis 4 diu conniventibus. *Ovarium* globosum, glabrum.

BRITISH CENTRAL AFRICA. Plain of Zomba, alt. 2500–3000 ft., Whyte.

434. *Vitis* (*Cissus*) *apodophylla*, Baker [Ampelideæ]; ad *V. congestam*, Baker, magis accedit.

*Caules* validi, flexuosi, pubescentes, cirrhis haud obviis, internodis superioribus 3–4 poll. longis. *Folia* sessilia vel subsessilia, 2–3-foliolata; foliola oblanceolato-oblonga, acuta, 6–9 poll. longa, supra medium 2–2½ poll. lata, e medio ad basin sensim angustata, supra basin serrata, membranacea, facie sordide viridia glabra, dorso pubescentia. *Panicula* terminalis, longe pedunculata, ramis sursum valde compositis pubescentibus; pedicelli breves. *Calyx* pubescens, campanulatus, minutus, dentibus 4 parvis latis. *Corolla* viridis, 1 lin. longa, medio constricta, petalis 4 diu conniventibus. *Ovarium* globosum, glabrum.

BRITISH CENTRAL AFRICA. Mount Zomba, alt. 2500–3500 ft., Whyte.



435. *Vitis* (*Cissus*) *masukuensis*, Baker [Ampelideæ]; ad *C. Buchanani*, Planch., magis accedit.

*Caules* sarmentosi, graciles, haud lignosi, apice leviter pubescentes. *Folia* longe petiolata, 5-foliolata; foliola membranacea, supra basin profunde crenata, subacuta, utrinque viridia glabra, foliolo terminali oblanceolato-oblongo petiolulato 3-4 poll. longo; stipulæ ovatæ, persistentes. *Panicula* laxissima, 5-6 poll. diam., ramis primariis patulis recurvatis laxè paniculatis dense pubescentibus, pedicellis cernuis floribus valde longioribus. *Calyx* minutus, campanulatus, pubescens, dentibus 4 parvis latis. *Corolla* 1 lin. longa, petalis 4 diu conniventibus. *Ovarium* ovoideum, glanduloso-pilosum.

BRITISH CENTRAL AFRICA. Masuku plateau, near Karonga, alt. 6500-7000 ft., Whyte.

436. *Deinbollia nyikensis*, Baker [Sapindaceæ]; ad *D. pinnatam*, Schum. et Thonn., magis accedit.

*Arbor* erecta. *Rami* lignosi, apice brunneo-pubescentes. *Folia* 4-6 poll. longa (petiolo 1-2 poll. longo incluso), foliolis 3-4 jugis subsessilibus oblongis pallide viridibus subcoriaceis obtusis integris 4-6 poll. longis glabris vel dorso obscure pubescentibus. *Paniculæ* terminales 8-9 poll. longæ, ramulis dense brunneovelutinæ, axillares breviores vel nullæ; pedicelli crassi, brevissimi. *Sepala* ovata, dense velutina, 1½ lin. longa. *Petala* obtusa, pilosa, calyce paulo longiora. *Stamina* 8, petalis subæquilonga, filamentis pilosa, antheris linearibus parvis. *Ovarium* in floribus submasculis rudimentarium. *Fructus* ignotus.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft. and between Kondowe and Karonga, North Nyasa-land, Whyte.

437. *Crotalaria argyrolobioides*, Baker [Leguminosæ-Genistææ]; ad *C. atrorubentem*, Hochst., magis accedit.

*Herba* perennis, ramosissima. *Ramuli* ascendentes, teretes, dense pubescentes. *Folia* breviter petiolata, digitatim trifoliolata, foliolis oblanceolatis obtusis vel leviter emarginatis minute mucronatis 3-6 lin. longis facie viridibus glabris dorso pallidis pubescentibus; stipulæ minutæ, caduæ. *Racemi* breves, terminales, sæpissime densi, pedicellis 1½-2 lin. longis dense pubescentibus; bracteæ foliaceæ vel minutæ. *Calyx* 2 lin. longus, dense pubescens, dentibus lanceolatis vel deltoideis tubo campanulato æquilongis. *Corolla* calyce duplo longior, lutea, striis et maculis rubro-brunneis decorata, vexillo dorso pubescente, carina curvata conspicue rostrata. *Legumen* sessile, oblongum, turgidum, pilosum, 3 lin. longum, seminibus 5-6 brunneis.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., Whyte, 109, 117.

438. *Crotalaria sparsifolia*, Baker [Leguminosæ-Genistææ]; ad *C. sphærocarpum*, Perott., magis accedit.

*Herba* perennis, erecta, ramosissima. *Ramuli* graciles, ascendentes, pilis ascendentibus albidis vestiti. *Folia* pauca, sparsa, brevissime petiolata, digitatim trifoliolata, foliolis oblanceolatis



acutis mucronatis 2–3 lin. longis, facie viridibus glabris, dorso dense pilosis; stipulæ nullæ vel cito deciduæ. *Racemi* laxissimi, pauciflori, terminales, pedicellis brevibus strigosis; bracteæ lineares, minutæ. *Calyx* pilosus,  $1\frac{1}{2}$  lin. longus, tubo brevi, dentibus lanceolatis. *Corolla* calyce duplo longior, vexillo rubro-luteo dorso pubescente, carina curvata conspicue rostrata. *Legumen* sessile, pilosum, subglobosum, 2–3-spermum, 2 lin. longum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft., and between Kondowe and Karonga, *Whyte*.

439. *Crotalaria phyllostachys*, *Baker* [Leguminosæ-Genisteæ]; ad *C. sphærocarpum*, Perott., magis accedit.

*Suffrutex* erectus, ramosissimus. *Rami* lignosi, graciles, ascendentes, teretes, virgati, pilis ascendentibus dense vestiti. *Folia* breviter petiolata, digitatim trifoliolata, foliolis oblanceolatis obtusis mucronatis 6–9 lin. longis pallide viridibus facie glabrescentibus dorso pilosis; stipulæ nullæ vel cito deciduæ. *Flores* ad axillas foliorum omnium 1–3-ni., pedicellis dense pubescentibus 2 lin. longis. *Calyx* pilosus, 2 lin. longus, tubo brevi, dentibus lanceolato-deltoides tubo valde longioribus. *Corolla* calyce duplo longior, vexillo leviter sericeo luteo striis brunneis decorato, carina curvata conspicue rostrata. *Legumen* sessile, oblongum, pilosum, monospermum, 2 lin. longum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft. and between Mpata and the commencement of the Nyasa-Tanganyika plateau, alt. 2000–3000 ft., *Whyte*.

440. *Crotalaria Johnstoni*, *Baker* [Leguminosæ-Genisteæ]; ad *C. hyssopifoliam*, Klotzsch, magis accedit.

*Herba* perennis, erecta, ramosissima. *Rami* graciles, ascendentes, teretes, albido-pilosi. *Folia* breviter petiolata, digitatim trifoliolata, foliolis oblongo-oblanceolatis obtusis minute mucronatis 6–9 lin. longis facie subglabris dorso parce pilosis; stipulæ nullæ. *Flores* in racemosis terminalibus subdensis 1–2 poll. longos aggregati aut in axillis foliorum solitarii, pedicellis brevibus pilosis; bracteæ lineares, pilosi. *Calyx* pilosus  $1\frac{1}{2}$  lin. longus, tubo brevissimo, dentibus lanceolatis. *Corolla* pallide lutea, calyce duplo longior, vexillo dorso pubescente, carina conspicue rostrata. *Legumen* sessile, subglobosum, pilosum, monospermum, 2 lin. longum.

BRITISH CENTRAL AFRICA. Near Fort Hill, Nyasa-Tanganyika plateau, alt. 3500–4000 ft., *Whyte*.

441. *Crotalaria nyikensis*, *Baker* [Leguminosæ-Genisteæ]; ad *C. hyssopifoliam*, Klotzsch, magis accedit.

*Herba* perennis, erecta, ramosissima. *Ramuli* graciles, teretes, ascendentes, dense pubescentes. *Folia* breviter petiolata, digitatim trifoliolata, foliolis oblanceolatis obtusis minute mucronatis 3–6 lin. longis utrinque pallide viridibus dense pubescentibus; stipulæ nullæ. *Racemi* densi, multi, omnes terminales, globosi vel oblongi, pedicellis brevibus dense pilosis; bracteæ parvæ, lineares, pilosæ. *Calyx* dense pilosus, 1 lin. longus, dentibus



deltoides acuminatis tubo valde longioribus. *Corolla* pallide rubella, calyce duplo longior, dense pubescens, carina valde rostrata. *Legumen* sessile, subglobosum 1-2-spermum, 2 lin. longum, dense pilosum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., Whyte.

442. *Crotalaria leucotricha*, Baker [Leguminosæ-Genistee] ; ad *C. hyssopifoliam*, Klotzsch, magis accedit.

*Herba* perennis, erecta, e basi ramosissima. *Caules* graciles, erecti, semipedales, vel pedales, ubique dense albido-pilosi. *Folia* breviter petiolata, digitatim trifoliolata, foliolis oblanceolatis 3-4 lin. longis obtusis conspicue mucronatis utrinque dense persistenter pilosis ; stipulæ nullæ vel cito deciduæ. *Racemi* laxi, multiflori, terminales, pedicellis brevibus dense pilosis ; bracteæ lineares. *Calyx* dense pilosus, 2 lin. longus, tubo brevi, dentibus lanceolatis vel ovato-lanceolatis acuminatis tubo valde longioribus. *Corolla* pallide lutea, 3 lin. longa, vexillo dorso dense piloso, carina curvata conspicue rostrata. *Legumen* sessile, pilosum, subglobosum vel oblongum, monospermum,  $1\frac{1}{2}$ -2 lin. longum.

BRITISH CENTRAL AFRICA. Near Fort Hill, Nyasa-Tanganyika plateau, alt. 3500-4000 ft., Whyte.

443. *Crotalaria pauciflora*, Baker [Leguminosæ-Genistee] ; ad *C. ivantulensem*, Welw., angolensem magis accedit.

*Suffrutex* ramosissimus. *Ramuli* graciles, lignosi, ascendentes, pubescentes. *Folia* breviter petiolata, digitatim trifoliolata, foliolis obovatis obtusis mucronatis 2-3 lin. longis facie subglabris dorso dense pubescentibus ; stipulæ minutæ, caduæ ; *Flores* 1-3-ni, terminales, pedicellis brevibus cernuis pubescentibus. *Calyx* pilosus, 3 lin. longus, dentibus lanceolatis tubo campanulato æquilongis. *Corolla* calyce duplo longior. *Legumen* oblongum, 4 lin. longum, pubescens, oligospermum, breviter stipitatum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., common, Whyte.

444. *Crotalaria pilosiflora*, Baker [Leguminosæ-Genistee] ; ad *C. orthocladam*, Welw., magis accedit.

*Frutex* ramosissimus. *Rami* ascendentes, pallide virides, pubescentes. *Folia* distincte petiolata, digitatim trifoliolata, foliolis oblongis acutis mucronatis 6-15 lin. longis facie subglabris dorso pubescentibus ; stipulæ minutæ, lineares. *Racemi* multiflori, laxi, terminales, pedicellis dense pubescentibus ; bracteæ lineari-subulatae. *Calyx* dense pilosus 4 lin. longus, dentibus lanceolatis tubo campanulato longioribus. *Corolla* lutea, calyce paulo longior, vexillo dorso pubescente, carinæ rostro obtuso alis longiori. *Legumen* immaturum oblongum, sessile, dense pilosum, oligospermum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., Whyte.



445. *Crotalaria cæspitosa*, Baker [Leguminosæ-Genisteæ]; ad *C. maxillarem*, Klotzsch, magis accedit.

*Herba* perennis, e basi lignosa ramosissima. *Caules* dense cæspitosi, breves, graciles, diffusi, pubescentes. *Folia* breviter petiolata, digitatim trifoliolata, foliolis oblanceolatis obtusis 6-12 lin. longis utrinque viridibus primum dorso pubescentibus demum glabrescentibus; stipulæ parvæ, lineares. *Racemi* laxi, pauciflori, terminales, pedicellis pubescentibus calyce brevioribus; bracteæ lineares, minutæ. *Calyx* pubescens, 2 lin. longus, dentibus lanceolatis tubo longioribus. *Corolla* aurantiaca, calyce duplo longior, vexillo dorso glabro, carina curvata conspicue rostrata. *Legumen* sessile, oblongum, durum, glabrum, oligospermum, 5 lin. longum.

BRITISH CENTRAL AFRICA. Mounts Zomba and Malosa, alt. 4000-6000 ft., *Whyte*.

446. *Crotalaria oocarpa*, Baker [Leguminosæ-Genisteæ]; ad *C. maxillarem*, Klotzsch, magis accedit.

*Suffrutex* ramosissimus. *Ramuli* ascendentes, pallide virides, dense pubescentes. *Folia* petiolata, digitatim trifoliolata, foliolis oblongis acutis 6-9 lin. longis infra pubescentibus supra minute scabridis; stipulæ minutæ, deciduæ. *Racemi* terminales, pauciflori vel multiflori, subdensi, pedicellis dense pubescentibus; bracteæ lineari-subulatæ. *Calyx* dense pilosus, 4 lin. longus, tubo brevi, dentibus lanceolatis tubo valde longioribus. *Corolla* lutea, calyce paulo longior, vexillo dorso pubescente, carina conspicue rostrata. *Legumen* oblongum, sessile, 5-6 lin. longum, polyspermum, dense pubescens.

BRITISH CENTRAL AFRICA. Between Mpata and the commencement of the Nyasa-Tanganyika plateau, alt. 2000-3000 ft., *Whyte*.

447. *Crotalaria karongensis*, Baker [Leguminosæ-Genisteæ]; ad *C. maxillarem*, Klotzsch, magis accedit.

*Herba* perennis. *Caules* ascendentes, pallide virides, pubescentes. *Folia* longe petiolata, digitatim trifoliolata, foliolis obovatis subacutis tenuibus 1-2' poll. longis utrinque viridibus facie glabris dorso leviter pubescentibus. *Racemi* laxissimi, terminales et axillares, 4-6 poll. longi, pedicellis, cernuis pubescentibus; bracteæ minutæ, deciduæ. *Calyx* pubescens, 2-2½ lin. longus, tubo campanulato, dentibus ovatis vel oblongis tubo æquilongis. *Corolla* pallide lutea, calyce duplo longior, vexillo dorso pubescente, carina curvata conspicue rostrata. *Legumen* oblongum, pubescens, sessile, polyspermum, 6-8 lin. longum.

BRITISH CENTRAL AFRICA. Between Kondowe and Karonga, *Whyte*.

448. *Crotalaria gymnocalyx*, Baker [Leguminosæ-Genisteæ]; ad *C. maxillarem*, Klotzsch, magis accedit.

*Frutex*, ramulis lignosis virgatis ascendentibus gracilis. *Folia* digitatim trifoliolata, foliolis oblanceolatis obtusis 6-9 lin. longis utrinque viridibus obscure pubescentibus, petiolo 3-4 lin. longo; stipulæ deciduæ, minutæ. *Racemi* pauciflori, laxi,



terminales, pedicellis cernuis pubescentibus calyce brevioribus; bracteae minutae, deciduae. *Calyx* 3 lin. longus, tubo campanulato glabro, dentibus lanceolatis vel deltoideis acuminatis tubo æquilongis. *Corolla* lutea, 6 lin. longa, vexillo dorso glabro. *Orarium* stipitatum, lineare, glabrum, multiovulatum. *Legumen* ignotum.

BRITISH CENTRAL AFRICA. Fort Hill, Nyasa-Tanganyika plateau, alt. 3500–4000 ft., and between Mpata and the commencement of the plateau, alt. 2000–3000 ft., *Whyte*.

449. *Crotalaria valida*, *Baker* [Leguminosæ-Genisteæ]; ad *C. rectam*, Steud., magis accedit; recedit legumine oblongo.

*Frutex* erectus. *Rami* lignosi, dense pubescentes. *Folia* breviter petiolata, digitatim trifoliolata, foliolis oblongis acutis basi cuneatis 12–18 lin. longis subcoriaceis facie sparse dorso dense pubescentibus; stipulae minutae, deciduae. *Racemi* terminales, pauciflori, pedicellis 3–4 lin. longis; bracteae parvae, lineares, subcoriaceae. *Calyx* pilosus, 6 lin. longus, tubo brevi, dentibus lanceolatis tubo valde longioribus. *Corolla* 9 lin. longa, vexillo luteo-brunneo dorso piloso, carina rostro crasso curvata. *Legumen* sessile, durum, oblongum, oligospermum, dense pilosum, 9 lin. longum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft. *Whyte*, and between Kondowe and Karonga, *Whyte*, 373.

450. *Argyrolobium?* *deflexiflorum*, *Baker* [Leguminosæ-Genisteæ]; a speciebus reliquis adhuc ex Africa tropica missis recedit calyce haud bilabiato.

*Herba* perennis, e basi ramosissima. *Caulis* graciles, glabri, diffusi, intricati. *Folia* breviter petiolata, digitatim trifoliolata, foliolis oblanceolatis obtusis mucronatis utrinque viridibus glabris, centrale 9–12 lin. longum, lateralibus minoribus; stipulae lineares, foliaceae, persistentes. *Racemi* densi, globosi, omnes axillares, pedunculati, pedicellis brevissimis centralibus et inferioribus deflexis; bracteae subulatae, minutae. *Calyx* glaber, 2 lin. longus, dentibus deltoideis tubo campanulato brevioribus. *Corolla* albo-lilacina, calyce duplo longior, vexillo dorso glabro petalis reliquis brevior, carina obtusa. *Legumen* sessile, lineare, planum, glabrum, oligospermum, 8–9 lin. longum.

BRITISH CENTRAL AFRICA. Fort Hill, Nyasa-Tanganyika plateau, alt. 3500–4000 ft., *Whyte*.

This has the flattened pod and obtuse keel of *Argyrolobium* and the calyx of *Crotalaria*.

451. *Argyrolobium leucophyllum*, *Baker* [Leguminosæ-Genisteæ]; ad *A. shirensen*, Taubert, magis accedit.

*Suffrutex* caulibus gracilibus teretibus erectus, dense persistenter albo-pubescent. *Folia* breviter petiolata, digitatim trifoliolata, foliolis oblongis obtusis integris basi cuneatis 1–2 poll. longis facie viridibus obscure pilosis dorso dense persistenter albo-pubescentibus; stipulae ovatae, acutae, pubescentes. *Racemi* axillares, longe pedunculati, globosi, multiflori, pedicellis brevibus sericeis; bracteae foliaceae, lanceolatae. *Calyx* 4 lin. longus, dense



pubescens, profunde bilabiatus, dentibus angustis acuminatis *Corolla* pallide lutea, calyce vix longior, vexillo obovato dorso dense piloso. *Ovarium* multiovulatum, lineare, dense pilosum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft., *Whyte*, 251.

452. *Argyrobium longipes*, *N. E. Brown* [Leguminosæ-Genisteæ]; *A. pumilo* Eck. et Zeyh., affine, sed foliis utrinque hirtis et pedunculis multo longioribus differt.

*Caules* prostrati, ramosi, ramis 3–10 poll. longis, lignescentes, appresse pubescentes. *Folia* petiolata, trifoliolata; petioli  $\frac{3}{4}$ – $2\frac{1}{2}$  lin. longi; foliola 3–7 lin. longa,  $2\frac{1}{2}$ – $4\frac{1}{2}$  lin. lata, elliptica, obtusa, mucronulato-apiculata, utrinque appresse pilosa; stipulæ 1–2 lin. longæ,  $\frac{1}{3}$ –1 lin. latæ, lanceolatæ ovato-lanceolatæ vel ovatæ, acuminatæ vel acutæ, supra glabræ, subtus pilosæ. *Pedunculi* foliis oppositi,  $\frac{3}{4}$ –3 poll. longi, uniflori, appresse pubescentes. *Bracteolæ*  $\frac{1}{2}$ –1 lin. longæ, subulatæ vel lanceolatæ. *Pedicelli* breves. *Calyx*  $2\frac{1}{2}$ –4 lin. longus, profunde bilabiatus, appresse pilosulus, labio superiore bidentato, inferiore tridentato, dentibus lanceolatis acuminatis æquilongis. *Corolla* 4–5 lin. longa; vexillo suborbiculari unguiculato dorso sericeo-pubescente; alis oblongis obtusis apice pubescentibus, carina subacuta glabra. *Ovarium* pluriovulatum, appresse fulvo-pubescent.

SOUTH AFRICA. Transvaal: Berea Ridge, Barberton, 3,000 ft., February, *Galpin*, 1305. Natal, without precise locality, *Gerrard*, 1764, 1765.

453. *Indigofera lupulina*, *Baker* [Leguminosæ-Galegeæ]; ad *I. strobiliferam*, Hochst., e sectione Capitatarum magis accedit.

*Herba* annua, humilis, e basi ramosa, ubique albo-lanosa. *Folia* breviter petiolata, pinnatim trifoliolata, foliolis oblongis obtusis 5–6 lin. longis basi cuneatis facie breviter dorso longe albo-lanosis; stipulæ magnæ, ovatæ, acutæ, membranaceæ, persistentes. *Racemi* axillares et terminales, oblongi, pedunculati, 9–12 lin. longi; bracteæ unifloræ, orbiculares, emarginatæ, 3 lin. longæ et latæ, persistentes, imbricatæ. *Calyx* 1 lin. longus, tubo brevissimo, dentibus setaceis. *Corolla* calyce 2–3-plo longior. *Legumen* oblongum, dispermum, 2 lin. longum.

BRITISH CENTRAL AFRICA. Between Kondowe and Karonga, *Whyte*, 336.

454. *Indigofera nyikensis*, *Baker* [Leguminosæ-Galegeæ]; ad *I. griseam*, *Baker*, e sectione Dissitiflorarum magis accedit.

*Suffrutex* gracilis. *Ramuli* lignosi, pilis appressis albis et deorsum setis patulis brunneis vestiti. *Folia* breviter petiolata, imparipinnata, foliolis 5–7 oblanceolatis conspicue mucronatis 3–4 lin. longis rigidulis utrinque dense albo-pilosis; stipulæ minutæ, lineari-subulatæ, scariosæ. *Flores* ad apices ramulorum pauci, pedicellis dense pilosis. *Calyx* 2 lin. longus, dense pilosus, tubo brevi campanulato, dentibus lineari-setaceis glanduloso-pilosis tubo multo longioribus. *Corolla* rubra, calyce duplo longior. *Ovarium* cylindricum, sessile, multiovulatum. *Legumen* ignotum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft., Whyte, 151.

455. *Indigofera microscypha*, Baker [Leguminosæ-Galegeæ]; ad *I. nyikensem*, Baker, (vide supra) e sectione Dissitiflorarum arcte accedit, sed differt setis patulis nullis petalisque minoribus.

*Suffrutex* gracilis. *Ramuli* juniores ascendentes, appresse albo-pilosi. *Folia* breviter petiolata, imparipinnata, foliolis 7 oblanceolatis mucronatis rigidulis 3–4 lin. longis, utrinque pallide viridibus appresse albo-pilosis: stipulæ minutæ, caducæ. *Flores* ad apices ramulorum pauci, breviter racemosi, pedicellis dense albo-pilosis. *Calyx* albo-pilosus, 2 lin. longus, tubo brevissimo, dentibus elongatis lineari-setaceis glanduloso-pilosis. *Corolla* rubra, 3 lin. longa, extus pilosa. *Ovarium* sessile, cylindricum, multiovulatum. *Legumen* ignotum.

BRITISH CENTRAL AFRICA. Between Mpata and the commencement of the Nyasa-Tanganyika plateau, alt. 2000–3000 ft., Whyte.

456. *Indigofera patula*, Baker [Leguminosæ-Galegeæ]; ad *I. pentaphyllum*, Linn., e sectione Dissitiflorarum accedit.

*Herba* perennis, e basi ramosissima. *Caules* breves, patuli, graciles, glanduloso-setosi et appresse albo-pilosi. *Folia* breviter petiolata, imparipinnata, foliolis 7 oblanceolatis mucronatis 3 lin. longis, utrinque viridibus dense albo-pilosis; stipulæ setaceæ. *Racemi* multi, axillares, laxi, pauciflori, pedunculati, pedicellis cernuis. *Calyx* dense pilosus, 2 lin. longus, tubo brevissimo, dentibus elongatis setaceis glandulosis. *Corolla* rubra, calyce duplo longior. *Ovarium* sessile, cylindricum, multiovulatum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft., Whyte.

457. *Indigofera macra*, Baker [Leguminosæ-Galegeæ]; ad *I. pentaphyllum*, Linn. e sectione Dissitiflorarum magis accedit.

*Herba* erecta, ramosissima. *Ramuli* gracillimi, ascendentes, juniores appresse albo-pilosi. *Folia* breviter petiolata, imparipinnata, foliolis oblanceolatis mucronatis 2–3 lin. longis utrinque glaucis appresse albo-pilosis; stipulæ setaceæ, caducæ. *Racemi* laxi, pauciflori, axillares, breviter pedunculati, pedicellis brevissimis. *Calyx* 1 lin. longus, dense albo-pilosus, tubo brevissimo, dentibus setaceis. *Corolla* rubra, calyce duplo longior. *Legumen* sessile, cylindricum, polyspermum, dense pilosum, 3 lin. longum.

BRITISH CENTRAL AFRICA. Between the Songwe river and Karonga, alt. 1700–2000 ft., Whyte.

458. *Indigofera* (*Sphæridiophorum*) *karongensis*, Baker [Leguminosæ-Galegeæ]; ad *I. terminalem*, Baker, magis accedit,

*Frutex* ramosissimus. *Ramuli* lignosi, argenteo-incani. *Folia* sessilia, foliolis 5 oblanceolatis obtusis mucronatis rigidis 2 lin. longis, utrinque dense persistenter albo-pilosis; stipulæ setaceæ. *Racemi* axillares, pauciflori, foliis æquilongi, pedicellis brevibus



incanis. *Calyx*  $\frac{3}{4}$  lin. longus, dense albo-pilosus, dentibus deltoideis tubo æquilongis. *Corolla* calyce triplo longior. *Legumen* subglobosum, 1 lin. diam., dense albo-pilosum, durum, monospermum.

BRITISH CENTRAL AFRICA. Between Kondowe and Karonga, Whyte.

459. *Indigofera* (*Sphæridiophorum*) *microcalyx*, Baker [Leguminosæ-Galegeæ]; ad *I. demissam*, Taubert, magis accedit.

*Suffrutex* erectus. *Ramuli* virgati, ramosi, ubique persistenter albo-incani. *Folia* breviter petiolata, pinnatim 3-5-foliata, foliolis oblanceolatis mucronatis rigidulis utrinque dense albo-pubescentibus; stipulæ minutæ, subulatæ. *Racemi* numerosi, densi, pauciflori, brevissime pedunculati, pedicellis brevissimis pilosis. *Calyx*  $\frac{1}{2}$  lin. longus, pilosus, dentibus acuminatis tubo æquilongis. *Corolla* calyce quadruplo longior. *Legumen* sessile, subglobosum, monospermum, pilosum, 1 lin. longum.

BRITISH CENTRAL AFRICA. North Nyasa-land, Whyte.

460. *Indigofera fusco-setosa*, Baker [Leguminosæ-Galegeæ]; ad *I. trachyphyllam*, Benth., e sectione *Simplicifoliarum* arcte accedit.

*Herba* perennis, erecta. *Caules* pilis albis araneosis et setis atro-brunneis patulis vestiti. *Folia* subsessilia, simplicia, lineariblonga,  $1\frac{1}{2}$ -2 poll. longa, obtusa, basi rotundata, utrinque sparse pilosa, facie saturate viridia, dorso pallida. *Racemi* axillares, longe pedunculati, densi, oblongi vel oblongo-cylindrici, 2-3 poll. longi, rhachi dense setosi, pedicellis brevibus; bracteæ lineares. *Calyx* brunneus, dense setosus, 3 lin. longus, tubo brevi, dentibus setaceis tubo valde longioribus. *Corolla* atro-purpurea, calyce paulo longior. *Legumen* sessile, lineare, oligospermum, 4 lin. longum, valvis turgidis brunneis setosis.

BRITISH CENTRAL AFRICA. Masuku plateau, alt. 6000-7000 ft. and between Kondowe and Karonga, Whyte.

461. *Indigofera lonchocarpifolia*, Baker [Leguminosæ-Galegeæ]; ad *I. rhynchocarpam*, Welw., e sectione *Tinctostrarum* magis accedit.

*Suffrutex*, ramulis junioribus pubescentibus. *Folia* petiolata imparipinnata, foliolis 7 oppositis oblongis acutis petiolulatis 2-2 $\frac{1}{2}$  poll. longis facie viridibus glabris dorso pallide viridibus obscure pubescentibus; stipulæ magnæ, scariosæ, caduæ, e basi lata setaceæ. *Racemi* axillares, multiflori, pedunculati, foliis æquilongi, pedicellis brevibus glabris. *Calyx* obliquus, brunneus, 1 lin. longus, parce pilosus, dentibus parvis obtusis. *Corolla* albo-brunnea, 4 lin. longa. *Ovarium* sessile, lineare, multiovulatum.

BRITISH CENTRAL AFRICA. Fort Hill, Nyasa-Tanganyika plateau, alt. 3500-4000 ft., Whyte.

462. *Indigofera masukuensis*, Baker [Leguminosæ-Galegeæ]; ad *I. Spachii*, Baker, e sectione *Tinctostrarum* magis accedit.

*Suffrutex* gracilis. *Ramuli* juniores copiose albo-pilosi, pilis appressis. *Folia* breviter petiolata, imparipinnata, foliolis 9

oblanceolato-oblongis obtusis mucronatis 5-6 lin. longis facie viridibus parce pilosis dorso pallidis dense albo-pilosis; stipulæ setaceæ. *Racemi* multi, axillares, densi, multiflori, breviter pedunculati, pedicellis brevibus et rhachi atro-brunneo-pubescentibus. *Calyx* 2 lin. longus, atro-brunneus, pubescens, tubo brevissimo, dentibus setaceis. *Corolla* brunnea, calyce triplo longior. *Legumen* sessile, lineare, pilosum, polyspermum, 5 lin. longum.

BRITISH\* CENTRAL AFRICA. Masuku plateau, alt. 6500-7000 ft., Whyte.

463. *Tephrosia* (*Reineria*) *dissitiflora*, Baker [Leguminosæ-Galegæ]; ad *T. dimorphophyllum*, Welw., magis accedit.

*Herba* perennis. *Caules* graciles, glabri. *Folia* pinnatim 3-5-foliolata, foliolis lanceolatis subcoriaceis  $2\frac{1}{2}$ -3 poll. longis obtusis mucronatis utrinque appresse breviter pubescentibus; stipulæ minutæ, lanceolatæ. *Racemi* axillares, laxissimi, longe pedunculati, 3-10 poll. longi, pedicellis brevibus; bractæ parvæ, lineares. *Calyx* 2 lin. longus, dense pubescens, dentibus lanceolatis vel ovato-lanceolatis tubo longioribus. *Corolla* 4 lin. longa, vexillo dorso dense piloso. *Legumen* lineare, pubescens, rectum, polyspermum,  $2\frac{1}{2}$  poll. longum.

BRITISH CENTRAL AFRICA. Mount Zomba and Mount Malosa, alt. 4000-6000 ft., Whyte.

464. *Tephrosia* (*Reineria*) *zombensis*, Baker [Leguminosæ-Galegæ]; foliis et floribus *T. Vogelii*, Hook. fil., similis, sed calycis dentibus acuminatis tubo valde longioribus dissimilis.

*Frutex* ramulis lignosis pilis albidis dense vestitus. *Folia* breviter petiolata, 2-3 poll. longa, foliolis 11-15 oblongis obtusis  $1\frac{1}{2}$ -2 poll. longis facie viridibus glabris dorso albido-sericeis; stipulæ ovatæ, dorso dense pilosæ. *Racemi* densi, subglobosi, pedunculati, terminales; bractæ lanceolatæ, pubescentes. *Calyx* dense pilosus, 4 lin. longus, dentibus acuminatis tubo valde longioribus. *Corolla* rubra, calyce duplo longior, vexillo orbiculari dorso sericeo. *Ovarium* lineare, pilosum, multiovulatum. *Legumen* maturum ignotum.

BRITISH CENTRAL AFRICA. Mount Zomba, alt. 4000-6000 ft., Whyte.

465. *Tephrosia* (*Reineria*) *nyikensis*, Baker [Leguminosæ-Galegæ]; ad *T. huillense*, Welw., magis accedit.

*Frutex* 6-8-pedalis. *Ramuli* lignosi, sursum dense pilosi. *Folia* breviter petiolata, semipedalia, foliolis 11-13 coriaceis oblanceolatis obtusis mucronatis  $1\frac{1}{2}$ -2 poll. longis facie viridibus glabris dorso dense pubescentibus; stipulæ lanceolatæ, pubescentes. *Racemi* densi, breves, sæpissime terminales; bractæ ovatæ, pubescentes. *Calyx* 4 lin. longus, dense pilosus, dentibus lanceolatis acuminatis tubo multo longioribus. *Corolla* calyce duplo longior, vexillo dorso dense sericeo. *Legumen* lineare, polyspermum; 2 poll. longum, pilosum, stylo applanato.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., Whyte.



466. *Tephrosia* (*Reineria*) *periculosa*, *Baker* [Leguminosæ-Galegeæ]; ad *T. huillense*, Welw., magis accedit.

*Frutex* 6-pedalis. *Ramuli* molliter pubescentes. *Folia* breviter petiolata, 6-8 poll. longa., foliolis 17-19 oblongis obtusis 15-18 lin. longis utrinque dense pubescentibus; stipulæ ovatæ, pilosæ. *Racemi* densi, breves, pedunculati, omnes terminales; bractæ ovatæ, dense pubescentes. *Calyx* 6 lin. longus, dense brunneo-pilosus, dente infimo lanceolato tubo valde longiore, dentibus reliquis brevioribus obtusis. *Corolla* rubra, pollicaris, vexillo dorso dense sericeo. *Legumen* lineare, pilosum, polyspermum; stylus applanatus, glaber vel leviter pubescens.

BRITISH CENTRAL AFRICA. Between Kondowe' and Karonga, Whyte, 324. Used by the natives as a fish-poison.

467. *Tephrosia* (*Reineria*) *melanocalyx*, *Baker* [Leguminosæ-Galegeæ]; ad *T. huillense*, Welw., magis accedit.

*Suffrutex*, ramulis angulatis lignosis dense persistenter fulvo-pubescentibus. *Folia* breviter petiolata, pinnatim 3-5-foliolata, foliolis oblanceolatis obtusis mucronatis  $1\frac{1}{2}$ -2 poll. longis facie sparse dorso dense pubescentibus; stipulæ lineares, pubescentes. *Racemi* subdensi, 2-4 poll. longi, terminales et axillares; bractæ lineares, pubescentes. *Calyx* breviter pedicellatus, 4 lin. longus, pilis atro-brunneis dense vestitus, dentibus acuminatis tubo valde longioribus. *Corolla* purpurea, 6 lin. longa, vexillo dorso dense pubescente. *Ovarium* cylindricum, dense pilosum, multiovulatum; stylus applanatus, basi solum pubescens.

BRITISH CENTRAL AFRICA. Near Fort Hill, Nyasa-Tanganyika plateau, alt. 3500-4000 ft., Whyte.

468. *Microcharis* *Galpini*, *N. E. Brown* [Leguminosæ-Galegeæ]; affinis *M. tenelle*, Benth., sed gracilior, et foliis angustioribus petiolisque longioribus differt.

*Caules* e basi ramosi, 3-10 poll. alti, herbacei, filiformes, glabri vel pilis minutis paucissimis instructi. *Foliorum* simplicium petioli 2-3 lin. longi; laminæ 6-16 lin. longæ,  $\frac{3}{4}$ - $1\frac{1}{2}$  latæ, lineares, acutæ, mucronatæ, basi leviter angustatæ, utrinque pilis appressis bifurcis, iis Indigoferarum, nisi quod crura furcæ inæqualia sint, similibus, sparse instructæ; stipulæ subulatæ,  $\frac{1}{2}$ -2 lin. longæ. *Racemi*  $1\frac{1}{2}$ - $3\frac{1}{2}$  poll. longi, filiformes, glabri, floribus 3-7 distantibus parvis instructi; bractæ  $\frac{3}{4}$  lin. longæ, setacæ; pedicelli filiformes,  $1\frac{1}{2}$ - $2\frac{1}{2}$  lin. longi. *Calycis* tubus  $\frac{1}{2}$  lin. longus, pilis appressis lateraliter affixis pubescens; dentes  $\frac{1}{2}$  lin. longi, subulati. *Corolla* glabra, rubra; vexillum  $1\frac{3}{4}$  lin. longum,  $1\frac{1}{2}$  lin. latum, late obovatum, obtusissimum; alæ  $2\frac{1}{4}$  lin. longæ, fere 1 lin. latæ, cuneato-obovatae, obtusissimæ vel subtruncatæ; carina 2 lin. longa, recta, acuminata. *Legumen* 4- $5\frac{1}{2}$  lin. longum,  $\frac{3}{4}$  lin. latum, lineare, 4-6-spermum.

SOUTH AFRICA. Transvaal: summit of Saddleback Mountain, near Barberton, 5000 ft., March, 1891, Galpin, 1315.

This is the first species of *Microcharis* that has been found south of the tropic.

469. *Æschynomene* (*Ochopodium*) *sparsiflora*, *Baker* [Leguminosæ-Hedysaræe]; ad *Æ. pulchellam*, Planch., habitu magis accedit; recedit floribus magnis sæpissime solitariis.

*Herba* humilis, perennis, e basi ramosa. *Caulis* erecti, gracillimi, sursum pubescentes. *Folia* breviter petiolata, foliolis 4-5-jugis oblongis obtusis 3-4 lin. longis pubescentibus vel glabrescentibus, petiolo seta terminato; stipulæ oblongæ, acutæ, magnæ, persistentes, coriaceæ. *Pedunculi* axillares, breves, sæpissime uniflori. *Calyx* 3-4 lin. longus, pubescens, tubo brevissimo, labiis oblongis obtusis. *Corolla* flava, glabra, 6 lin. longa. *Ovarium* cylindricum, pubescens, biovulatum; stylus brevis incurvatus. *Legumen* maturum ignotum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., *Whyte*, 256; between Mpata and the commencement of the Nyasa-Tanganyika plateau, alt. 2000-3000 ft., *Whyte*.

470. *Æschynomene* (*Ochopodium*) *nyikensis*, *Baker* [Leguminosæ-Hedysaræe]; ad *Æ. mimosæfoliam*, Vatke, magis accedit.

*Frutex* 4-6-pedalis. *Ramuli* lignosi, recti, teretes, sursum glanduloso-pubescentes. *Folia* subsessilia, 3-4 lin. longa, foliolis 10-12-jugis linearibus rigide coriaceis imbricatis  $\frac{3}{4}$  lin. longis oblique mucronatis; stipulæ parvæ, lanceolatæ, caduæ, infra insertionem haud productæ. *Racemi* laxi, pauciflori, in paniculam amplam terminalem aggregati; bracteæ lanceolatæ, coriaceæ, persistentes. *Calyx* 4 lin. longus, labio inferiore oblongo apice tridentato quam superiore longiore. *Corolla* lutea, glabra, 6 lin. longa. *Legumen* glabrum, breviter stipitatum, articulis 2 planis dimidiato-orbicularibus 4 lin. longis.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., a common showy shrub, *Whyte*.

471. *Æschynomene* *dissitiflora*, *Baker* [Leguminosæ-Hedysaræe]; inter sectiones *Euæschynomenen* et *Ochopodium* medium tenens; e stipulis ad priorem, e habitu et fructu ad posteriorem attinens.

*Fruticosa* ramulis teretibus lignosis sursum pubescentibus gracilis. *Folia* breviter petiolata, foliolis crebris 10-jugis lineariblongis 4-5 lin. longis apice obtusis emarginatis mucronatis; stipulæ magnæ, lanceolatæ, coriaceæ, infra insertionem productæ. *Racemi* laxi, elongati, axillares, apice 1-2-flori, nodis inferioribus bracteis 2 ovatis coriaceis persistentibus præditis. *Calyx* pubescens, 2 lin. longus, labiis ovatis, inferiore majore. *Corolla* lutea, glabra, 5 lin. longa. *Legumen* breviter stipitatum, glabrum, articulis 1-2 suborbicularibus  $1\frac{1}{2}$ -2 lin. latis.

BRITISH CENTRAL AFRICA. Fort Hill, Nyasa-Tanganyika plateau, alt. 3500-4000 ft., *Whyte*.

472. *Smithia* (*Kotschya*) *congesta*, *Baker* [Leguminosæ-Hedysaræe]; ad *S. recurvifoliam*, Taubert, magis accedit.

*Suffrutex* ramosus. *Ramuli* ascendentes, lignosi, dense pubescentes. *Folia* subsessilia, foliolis 4-jugis lanceolatis mucronatis recurvatis rigide coriaceis 3-4 lin. longis, rhachi decurvato in



setam desinente ; stipulæ ovato-lanceolatae, rigide coriaceae, persistentes. *Racemi* pauciflori, axillares, congesti, breviter pedunculati, rhachi setis stramineis magnis præditi. *Calyx* tubulosus, 4 lin. longus, strigosus, tubo brevi, dente supremo oblanceolato obtuso, infimis brevioribus linearibus ; bracteolæ 2, ovatae, acutae, coriaceae, persistentes, ad basin calycis appressae. *Corolla* lutea, 6 lin. longa. *Ovarium* pubescens, torulosum, biovulatum ; stylus elongatus incurvatus. *Legumen* maturum ignotum.

BRITISH CENTRAL AFRICA. Masuku plateau, alt. 6500–7000 ft., Whyte.

473. *Smithia* (Kotschya) *drepanophylla*, Baker [Leguminosæ-Hedysaræ] ; ad *S. recurvifolium*, Taubert, magis accedit.

*Frutex*, ramis lignosis teretibus dense pubescens. *Folia* subsessilia, falcata, 6 lin. longa, foliolis 8–9-jugis lanceolatis recurvatis rigide coriaceis 2 lin. longis imbricatis oblique mucronatis ; stipulæ parvæ, lanceolatae, infra insertionem haud productæ. *Racemi* pauciflori, axillares, breviter pedunculati, rhachi setis luteis magnis strigosi ; bracteæ ovatae, coriaceae, persistentes. *Calyx* pubescens, 3 lin. longus, labiis oblongis obtusis, superiore majore ; bracteolæ ovatae, persistentes. *Corolla* lutea, glabra, calyce duplo longior. *Ovarium* pubescens, biovulatum. *Legumen* maturum ignotum.

BRITISH CENTRAL AFRICA. Between Kondowe and Karonga, Whyte.

474. *Smithia* (Kotschya) *sphærocephala*, Baker [Leguminosæ-Hedysaræ] ; ad *S. capituliferam*, Welw., magis accedit.

*Rami* teretes, recti, sursum pubescentes. *Folia* breviter petiolata, 9–21 lin. longa, foliolis 9–10-jugis dimidiato-oblongis 2–4 lin. longis rigide coriaceis imbricatis ; stipulæ parvæ, lanceolatae, caducae, infra insertionem haud productæ. *Flores* in capitulis densis globosis axillaribus breviter pedunculatis aggregati ; bracteæ persistentes, ovato-lanceolatae ; eae et rhachis setis luteis stigosa. *Calyx* 2–3 lin. longus, strigosus, labiis ovatis ; bracteolæ 2 ovatae, coriaceae, persistentes, ad basin appressae. *Corolla* lutea, calyce duplo longior, vexillo orbiculari extus glabro. *Ovarium* pubescens, biovulatum. *Legumen* maturum ignotum.

BRITISH CENTRAL AFRICA. Between Kondowe and Karonga, Whyte.

475. *Geissapsis drepanocephala*, Baker [Leguminosæ-Hedysaræ] ; ad *G. cristatam*, Wight et Arn., magis accedit.

*Herba* perennis, erecta, glabra. *Rami* graciles, ascendentes, teretes. *Folia* breviter petiolata, pinnata vel digitata, foliolis sæpissime bijugis obovatis emarginatis 9–12 lin. longis, petiolo in cirrho minuto setiformi terminata ; stipulæ magnæ, ovatae, subcoriaceae, basi inæqualiter auriculatae. *Racemi* axillares, breviter pedunculati, oblongi, deflexi, pedicellis brevibus ; bracteæ imbricatae, persistentes, orbiculares, emarginatae, complicatae, 5–6 lin. longae et latae, margine haud ciliatae. *Calyx* minutus, labiis ovatis. *Legumen* dispermium, bractea brevius, articulis planis 2 lin. latis.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., and between Mpata and the commencement of the Nyasa-Tanganyika plateau, alt. 2000-3000 ft., *Whyte*.

476. *Lathyrus intricatus*, *Baker* [Leguminosæ-Vicieæ]; ad *L. kilimandscharicum*, Taubert, arcte accedit.

*Caules* intricati, graciles, angulati, adolescentes glabri, juniores obscure pubescentes. *Folia* breviter petiolata, foliolis unijugis linearibus vel lanceolatis glabris  $1\frac{1}{2}$ -2 poll. longis: stipulæ sagittatæ, lanceolatæ, auriculis linearibus; cirrhus terminalis, elongatus, tortuosus. *Flores* 1-2-ni, pedunculis brevibus, pedicellis pubescentibus calyce brevioribus; bracteæ 3-4, lanceolatæ, segregatæ, persistentes. *Calyx* 3 lin. longus, dentibus lanceolatis acuminatis tubo campanulato æquilongis. *Corolla* rubra, 4-5 lin. longa. *Legumen* lineare, planum, glabrum, 12-18 lin. longum, 2 lin. latum, 6-9-spermum, ad apicem attenuatum; stylus subulatus, rectus vel curvatus, 2 lin. longus.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 5000-6000 ft.; Masuku plateau, alt. 6500-7000 ft.; Fort Hill, Nyasa-Tanganyika plateau, and between Mpata and the commencement of the Nyasa-Tanganyika plateau, alt. 3000 ft., *Whyte*.

477. *Lathyrus malosanus*, *Baker* [Leguminosæ-Vicieæ]; ab *L. kilimandscharico*, Taubert, et *L. hygrophilo*, Taubert, recedit pedunculo foliolis longiore 1-4-floro.

*Caules* graciles, angulati, inferne glabri, superne leviter pilosi. *Folia* sessilia, foliolis linearibus unijugis 1 poll. longis; stipulæ lineares, deflexæ; cirrhus terminalis, elongatus, contortus. *Pedunculi*  $1\frac{1}{2}$ -2 poll. longi, 1-4-flori; bracteæ nullæ vel deciduæ; pedicelli pubescentes, calyce breviores. *Calyx* 2 lin. longus, tubo campanulato pubescente, dentibus lanceolatis tubo brevioribus. *Petala* rubella; vexillum obovatum, 4 lin. longum. *Legumen* lineare, glabrum, 3-4-spermum, 1 poll. longum, 2 lin. latum, ad apicem sensim attenuatum; stylus brevis, incurvatus.

BRITISH CENTRAL AFRICA. Mount Malosa, near Zomba, 4,000-6,000 ft., *Whyte*.

478. *Vigna malosana*, *Baker* [Leguminosæ-Phaseoleæ]; ad *V. angivensem*, Baker, madagascariensem, arcte accedit.

*Herba* perennis. *Caules* breves, graciles, volubiles, glabri. *Folia* breviter petiolata, pinnatim trifoliolata, foliolo terminali parvo stipellato ovato vel ovato-lanceolato utrinque viridi glabro; stipulæ ovatæ, persistentes, basi auriculati. *Pedunculi* elongati, 1-2-flori, pedicellis brevibus; bracteolæ persistentes, ad calycem appressæ. *Calyx* glaber, 2 lin. longus, tubo campanulato, dentibus acutis parvis inæqualibus. *Corolla* 7 lin. longa, vexillo rubello glabro, carina pallida curvata obtusa. *Legumen* lineare, glabrum, polyspermum.

BRITISH CENTRAL AFRICA. Mount Malosa, near Zomba, alt. 4000-6000 ft., *Whyte*.



479. *Dolichos trinervatus*, *Baker* [Leguminosæ-Phaseoleæ]; ad *D. erectum*, *Baker* fil., magis accedit.

*Herba* 3-pedalis, erecta. *Ramuli* virgati, graciles, teretes, pubescentes. *Folia* pinnatim trifoliolata, breviter petiolata, foliolis linearibus subcoriaceis 5-6 poll. longis e basi ad apicem conspicue trinervatis utrinque pubescentibus; stipulæ parvæ, caducæ. *Racemi* axillares et terminales, breves, densi, multiflori, pedicellis demum 2 lin. longis; bracteæ lanceolatae, sericeæ. *Calyx* pilosus, 4 lin. longus, dentibus acuminatis tubo campanulato longioribus. *Corolla* 8-9 lin. longa, rubro-lilacina, vexillo 5-6 lin. diam. dorso glabro. *Legumen* lineare, pilosum, rectum, paucispermum, 1 poll. longum.

BRITISH CENTRAL AFRICA. Between the Songwe River and Karonga, alt. 1700-2000 ft., *Whyte*. Shire Highlands, *Buchanan*, (1881 collection), 406.

480. *Dolichos malosanus*, *Baker* [Leguminosæ-Phaseoleæ]; ad *D. erectum*, *Baker* fil., magis accedit.

*Frutex* erecta. *Ramuli* lignosi, dense pubescentes. *Folia* longe petiolata, pinnatim trifoliolata, foliolis ovatis vel oblongis acutis basi late rotundatis  $1\frac{1}{2}$ -2 poll. longis utrinque pilosis; stipulæ nullæ vel cito caducæ. *Racemi* subdensi, terminales, 6-8 poll. longi, pedicellis brevibus ascendentibus dense pilosis; bracteolæ subulatæ. *Calyx* campanulatus, dense pilosus, 2 lin. longus, dentibus parvis ovatis. *Corolla* saturate purpurea, 9 lin. longa, vexillo obovato 6 lin. lato dorso glabro. *Ovarium* stipitatum, cylindricum, molliter pilosum, pauciovulatum; stylus elongatus, incurvatus applanatus, sursum pubescens, stigmatibus obliquo penicillato.

BRITISH CENTRAL AFRICA. Mount Malosa, near Zomba, alt. 4000-6000 ft., *Whyte*.

481. *Dolichos shuterioides*, *Baker* [Leguminosæ-Phaseoleæ]; ad *D. axillarem*, *E. Mey.*, et *D. formosum*, *A. Rich.*, magis accedit.

*Herba* volubilis. *Caules* graciles, dense breviter pubescentes. *Folia* petiolata, pinnatim trifoliolata, foliolis membranaceis utrinque pilosis, foliolo terminali ovato acuto  $1\frac{1}{2}$ -2 poll. longo. *Racemi* axillares, pedunculati, pauciflori, pedicellis pilosis calyce brevioribus; bracteæ magnæ, scariosæ, oblongæ, nervosæ, subpersistentes. *Calyx* pilosus, 3 lin. longus, dente infimo lanceolato tubo æquilongo, reliquis ovatis acuminatis brevioribus. *Corolla* purpurea, calyce duplo longior, vexillo obovato dorso glabro. *Legumen* lineare, curvatum, planum, glabrum, polyspermum, 2 poll. longum.

BRITISH CENTRAL AFRICA. Masuku plateau, alt. 6500-7000 ft., *Whyte*, 275.

482. *Rhynchosia* (*Cyanospermum*) *floribunda*, *Baker* [Leguminosæ-Phaseoleæ]; ad *R. calycinam*, *Guill.* et *Perr.*, magis accedit.

*Caules* lignosi, sarmentosi, juniores pilis sæpe glanduliferis dense pubescentes. *Folia* distincte petiolata, pinnatim trifoliolata,

foliolis subcoriaceis obtusis integris sparse pubescentibus e basi ad medium trinervatis, terminali obovato 2-3 poll. longo; stipulæ lanceolate, parvæ. *Pedunculi* lignosi, axillares, elongati, furcati. *Racemi* densi, 2-4 poll. longi, pedicellis calyce vix longioribus dense glanduloso-pubescentibus; bracteæ magnæ, ovatæ, pubescentes. *Calyx*, flore expanso, 4 lin. longus, dense glanduloso-pubescent, dentibus obtusis tubo campanulato subæquilongis. *Corolla* saturate rubra, extus leviter pubescens, calyce dimidio longior. *Legumen* lineari-oblongum, dispermum, pubescens, 6 lin. longum.

BRITISH CENTRAL AFRICA. Fort Hill, Nyasa-Tanganyika plateau, alt. 3500-4000 ft., *Whyte*.

483. *Rhynchosia nyasica*, *Baker* [Leguminosæ-Phaseoleæ]; ad *R. splendentem*, Schweinf., et *R. Memnoniam*, DC., accedit.

*Caules* erecti, graciles, lignosi, pilis reflexis haud glanduliferis dense pubescentes. *Folia* petiolata, pinnatim trifoliolata, subcoriacea, utrinque dense pubescentia, foliolo terminali cordato-orbiculari integro subacuto 12-18 lin. longo et lato; stipulæ parvæ, lanceolatæ. *Racemi* axillares, laxi, subsessiles, pauciflori, rhachibus dense pubescentibus, pedicellis brevissimis; bracteæ parvæ, caducæ. *Calyx* pubescens, 2 lin. longus, dente infimo lanceolato tubo æquilongo, dentibus superioribus connatis brevioribus. *Corolla* 6 lin. longa, vexillo pubescente flavido venis longitudinalibus nigris percurso. *Ovarium* cylindricum, pilosum, pauciovulatum; stylus elongatus, incurvatus. *Legumen* ignotum.

BRITISH CENTRAL AFRICA. Between Kondowe and Karonga, alt. 2000-6000 ft., *Whyte*.

484. *Rhynchosia imbricata*, *Baker* [Leguminosæ-Phaseoleæ]; ad *R. Memnoniam*, DC., magis accedit.

*Caules* recti, lignosi, pilis mollibus patentibus hand glanduliferis dense persistenterque pilosi. *Folia* breviter petiolata, pinnatim trifoliolata, foliolis imbricatis cordato-orbicularibus cuspidatis integris utrinque pubescentibus, terminali  $1\frac{1}{2}$ - $2\frac{1}{2}$  poll. longo et lato; stipulæ parvæ, lanceolatæ. *Racemi* axillares, dense pubescentes, superiores elongati multiflori, inferiores breves pauciflori; pedicelli brevissimi; bracteæ parvæ, lanceolatæ. *Calyx* dense pubescens, 3 lin. longus, tubo campanulato, dentibus ovato-acuminatis tubo paulo brevioribus. *Corolla* 6 lin. longa, vexillo pubescente flavo-viridi venis longitudinalibus atropurpureis apice anastomosantibus percurso. *Ovarium* cylindricum, dense pubescens, pauciovulatum; stylus longus, incurvatus, glaber. *Legumen* ignotum.

BRITISH CENTRAL AFRICA. Between Mpata and the commencement of the Nyasa-Tanganyika plateau, alt. 2000-3000 ft., *Whyte*.

485. *Rhynchosia nyikensis*, *Baker* [Leguminosæ-Phaseoleæ] ad *R. ferrugineam*, A. Rich., magis accedit.

*Caules* lignosi, graciles, sarmentosi, superne pilis late brunneis raro apice glanduliferis dense pubescentes. *Folia* distincte



petiolata, pinnatim trifoliolata, facie saturate viridia, sparse pubescentia, dorso dense pubescentia, foliolo terminali ovato integro acuto 18–21 lin. longo; stipulæ parvæ, ovatæ. *Racemi* densi, multiflori, pedunculati, terminales et laterales, rhachibus dense pubescentes, pedicellis brevibus; bracteæ magnæ, obovato-cuspidatæ, pubescentes. *Calyx* dense pubescens, 5–6 lin. longus, dentibus inæqualibus lanceolatis tubo æquilongis vel paulo longioribus. *Corolla* calyce paulo longior, vexillo rubro dorso pubescente. *Ovarium* dense pilosum, pauciovulatum; stylus elongatus, incurvatus, pubescens. *Legumen* ignotum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft., and between Mpata and the Nyasa-Tanganyika plateau, alt. 2000–3000 ft., *Whyte*.

486. *Rhynchosia divaricata*, *Baker* [Leguminosæ-Phaseoleæ]; ad *R. viscosam*, DC., magis accedit.

*Caules* graciles, lignosi, sursum pilis brevibus sæpe glanduliferis dense pubescentes. *Folia* petiolata, pinnatim trifoliolata, facie viridia sparse pubescentia, dorso albida dense pubescentia, foliolo terminali ovato acuto integro 2 poll. longo; stipulæ parvæ, lanceolatæ. *Paniculæ* amplæ, laxæ, terminales, ramis dense glanduloso-pubescentes, racemis paucifloris, pedicellis infimis calyci æquilongis; bracteæ parvæ, ovatæ, caduceæ. *Calyx* 3 lin. longus, dense pubescens, dentibus lanceolatis tubo campanulato æquilongis. *Corolla* calyce duplo longior, vexillo obovato extus pubescente atro-purpureo albo variegato. *Ovarium* dense pilosum. *Legumen* 1½ poll. longum, dense pilosum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft., *Whyte*.

487. *Rhynchosia sphærocephala*, *Baker* [Leguminosæ-Phaseoleæ]; ad *R. viscosam*, DC., et *R. caribæam*, DC., accedit.

*Caules* volubiles, graciles, pilis appressis haud glanduliferis pubescentes. *Folia* longe petiolata, pinnatim trifoliolata, foliolis ovatis integris pubescentibus 1–2 poll. longis; stipulæ pubescentes, lanceolatæ, persistentes. *Racemi* axillares, densi, pauciflori, pedunculati, pedicellis brevissimis; bracteæ lanceolatæ, calyce breviores. *Calyx* dense pubescens, 3 lin. longus, tubo, campanulato, dente infimo lanceolata tubo æquilongo, dentibus reliquis latioribus brevioribus. *Corolla* calyce duplo longior, rubro-purpurea, vexillo orbiculari glabro, carina breviter rostata. *Ovarium* cylindricum, pubescens, pauciovulatum; stylus, longus, incurvatus, apice penicillatus. *Legumen* ignotum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft., common, *Whyte*, 211.

488. *Eriosema cryptanthum*, *Baker* [Leguminosæ-Phaseoleæ]; inter *E. cajanoides*, Hook, fil., et *E. montanum*, Baker fil., medium tenens.

*Frutex* ramulis lignosis rectis dense persistenter albido-pubescentis. *Folia* breviter petiolata, ascendunt, digitatim trifoliolata, foliolis oblanceolato-oblongis acutis e medio ad basin sensim

angustatis, venulis facie dorsali elevatis, foliolo terminali 18–21 lin. longo, lateralibus minoribus; stipulæ magnæ, lineares. *Racemi* terminales, densi, subglobosi, foliis ascendentibus occulti; pedicelli brevissimi; bracteæ lineares, pubescentes. *Calyx* pubescens, 3 lin. longus, dentibus deltoideis tubo campanulato æquilongis. *Corolla* calyce paulo longior. *Ovarium* oblongo-cylindricum, pubescens, biovulatum. *Legumen* ignotum.

BRITISH CENTRAL AFRICA. Plateau of Mount Zomba, alt. 5000–6000 ft., *Whyte*.

489. *Berlinia densiflora*, *Baker* [Leguminosæ-Cæsalpinieæ]; ad *B. angolensem*, Welw., magis accedit.

*Arbor* erecta. *Ramuli* lignosi, crassi, glabri. *Folia* distincte petiolata, foliolis 3–4-jugis petiolulatis oblongis obtusis coriaceis glabris  $2\frac{1}{2}$ – $4\frac{1}{2}$  poll. longis. *Paniculæ* densæ, terminales, ramis inferioribus axillaribus et ramulis brunneo-pubescentes; bracteolæ obovatæ, cucullatæ, coriaceæ, persistentes, 4 lin. longæ, brunneo-velutinæ. *Calyx* abortivus. *Petala* subæqualia, angusta, unguiculata, bracteolis breviora. *Stamina* petalis valde longiora. *Ovarium* oblongum, dense pilosum, pauciovulatum, stipite brevi crasso; stylus elongatus. *Legumen* ignotum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft., *Whyte*.

490. *Parinarium* (*Sarcostegia*) *floribundum*, *Baker* [Rosaceæ-Chrysobalanæ]; ad *P. polyandrum*, Benth., magis accedit.

*Arbor* ramulis validis lignosis glabra. *Folia* breviter petiolata, oblonga, obtusa, 4–5 poll. longa, coriacea, basi rotundata, utrinque glabra, facie nitida griseo-viridia, dorso pallida. *Paniculæ* corymbosæ, terminales et laterales, densæ, 4–6 poll. latæ, pediculis erectis crassis glabris. *Calycis* tubus turbinatus 2 lin. longus, haud gibbosus, intus solidus; limbi segmenta orbicularia, 2 lin. longa et lata, valde imbricata, exteriora glabra, interiora marginibus incana. *Petala* orbicularia, sepala vix superantia. *Stamina* permulta, antheris oblongis parvis, filamentis contortis 5–6 lin. longis. *Ovarium* dense pilosum; stylus elongatus, contortus. *Fructus* ignotus.

BRITISH CENTRAL AFRICA. Fort Hill Nyasa-Tanganyika plateau, alt. 3500–4000 ft., *Whyte*.

491. *Crassula nyikensis*, *Baker* [Crassulaceæ]; ad *C. globularioidem*, Britten, magis accedit.

*Herba* perennis, e basi valde ramosa. *Folia* rosularum steriliū obovato-cuneata, carnosa, viridia, sessilia, 4 lin. longa, facie glabra, marginibus setis albis dense ciliata. *Caules* floriferi 2–4 poll. longi, ad apicem foliis reductis oppositis decussatis præditi. *Flores* in cymas dichotomas compositas dense congesti. *Sepala* 5, carnosa, glabra, lanceolata,  $\frac{3}{4}$  lin. longa, marginibus haud ciliata. *Petala* oblanceolata, obtusa, alba, sepalis sesqui-longiora. *Stamina* petalis breviora, antheris parvis purpureis globosis. *Carpella* staminibus æquilongia.

BRITISH CENTRAL AFRICA. Highest ridges of the Nyika Mountains, alt. 7500 ft., on bare gneiss and granite rocks, *Whyte*.



492. *Crassula zombensis*, Baker [Crassulaceæ]; ad *C. abyssinica*, A. Rich., magis accedit.

*Herba* perennis, humilis, e basi ramosa. *Caules foliiferi* breves, cæspitiosi. *Folia* crebra, opposita, basi connata, ascendentia, lanceolata, obtusa, 6-9 lin. longa, utrinque albo-hispida, marginibus setis albidis ciliata. *Caules floriferi* breves, graciles, erecti, pubescentes, foliis 1-2-jugis valde reductis solum præditi. *Cymæ* plures, in paniculam parvam thyrsoidream aggregatæ; pedicelli breves, pubescentes. *Calyx*  $\frac{1}{2}$  lin. longus, segmentis 5 lanceolatis pubescentibus. *Petala* lanceolata, calyce duplo longiora. *Stamina* petalis breviora, antheris globosis minutis. *Carpella* staminibus æquilonga.

BRITISH CENTRAL AFRICA. Rocks of Mount Zomba, alt. 4000-6000 ft., Whyte.

493. *Kalanchoe flammea*, Stapf [Crassulaceæ]; proxim-*K. glaucescenti*, Britten, sed foliis brevioribus brevius pedicellatis, calycis segmentis liberis vel subliberis, corollae tubi et lorum proportionem diversa.

*Perennis* circiter  $1\frac{1}{2}$  ped. alta, glaberrima. *Caulis* parce ramosus, crebre foliatus. *Folia* obovato-oblonga, obtusa, abrupte vel sensim in petiolum attenuata, intermedia majora, circiter 2 poll. longa,  $1\frac{1}{4}$ - $1\frac{1}{2}$  poll. lata, vix glauca, crasse carnosae, integra vel obscure repando-crenata; petioli  $\frac{1}{2}$  poll. longi,  $\frac{1}{4}$ - $\frac{1}{3}$  poll. lati. *Cymæ* in corymbum densum,  $3$ - $3\frac{1}{2}$  poll. latum dispositae; pedunculi 2-4 poll. longi; rami inferiores  $1\frac{1}{2}$ -3 poll. longi; pedicelli 2-3 lin. longi. *Bractæ* lineares, obtusiusculæ, ad 2 lin. longæ, caducæ. *Flores* 4-meri. *Calyx* ad basin partitus, segmentis liberis vel basi tenuissime connexis angustis lineari-lanceolatis acutiusculis 2-2 $\frac{1}{2}$  lin. longis. *Corollæ* tubus 4-angulus,  $4\frac{1}{2}$ -5 lin. longus, flavescens; lobi ovati, acuti vel cuspidati,  $3\frac{1}{2}$ -4 lin. longi,  $2\frac{1}{2}$ -3 lin. lati, rubro-aurantiaci. *Glandulæ* lineares, 1 lin. longæ. *Carpella* 3 lin. longae; styli 1 lin. longi.

BRITISH EAST AFRICA. Somaliland, Miss Cole, (Cult. in horto Kewensi).

494. *Trichocladus malosanus*, Baker [Hamamelideæ]; ad *T. ellipticum*, Eckl. et Zeyh., magis accedit.

*Arbor*, ramulis lignosis apice albo-incanis. *Folia* alterna, breviter petiolata, oblonga, integra, subacuta, 2-3 poll. longa, subcoriacea, facie glabra, dorso albido-incana. *Flores* polygami, in capitulas densas globosas terminales et axillares aggregati. *Calyx* parvus, campanulatus, pilis stellatis brunneis lepidotus, dentibus 5 parvis obtusis. *Petala* 5, subulata, falcata, glabra, brunnea, 3-4 lin. longa. *Stamina* brevia, filamentis latis brevissimis, antheris valva laterali dehiscentibus. *Ovarium* 2-loculare, ovulis solitariis pendulis; styli breves. *Fructus* ignotus.

BRITISH CENTRAL AFRICA. Mount Malosa, alt. 4000-6000 ft., Whyte. This discovery adds a curious Cape genus to the flora of Tropical Africa.

495. *Weihea malosana*, Baker [Rhizophoræ]; ad *W. africanam*, Benth., arcte accedit.

*Arbor*, ramulis lignosis sursum leviter pilosis. *Folia* breviter petiolata, opposita, oblonga, obtusa, subcoriacea, inciso-crenata, facie glabra, dorso ad costam pubescentia. *Flores* 1-2-ni, axillares et terminales, pedicellis brevibus pilosis. *Calyx* 3 lin., longus, parce pilosus, tubo brevi, lobis 5 ovato-lanceolatis. *Petala* calyce paulo longiora, angusta, unguiculata, apice laciniata. *Stamina* circiter 20, calyci æquilonga, antheris oblongis parvis, filamentis subulatis glabris. *Ovarium* globosum, basi ad calycem adnatum; stylus staminibus æquilongus, subulatus. *Fructus* ignotus.

BRITISH CENTRAL AFRICA. Mount Malosa, near Zomba, alt. 4000-5000 ft., Whyte.

496. *Cacoucia Barteri*, Hemsley [Combretaceæ]; a *C. paniculata*, Laws., foliis tenuibus longiuscule petiolatis floribus minoribus recedit.

*Rami* floriferi graciles, glabri. *Folia* subopposita, fere membranacea, glabra, oblonga, circiter semipollicaria, acute acuminata, basi rotundata. *Racemi* graciles, flexuosi, atque flores pubescentes, pedicellis brevibus; bracteæ angustæ, quam flores breviores, cito deciduæ. *Flores* absque staminibus exsertis circiter 9 lin. longi, fere recti.—*C. paniculata*, Laws. in Oliver's *Fl. Trop. Afr.* II. p. 434, partim.

WEST TROPICAL AFRICA. Onitsha, Barter, 1857.

497. *Eugenia* (Syzygium) *masukuensis*, Baker [Myrtaceæ]; inter *E. owariensem* Beauv., et *E. cordatam*, Laws., medium tenens.

*Arbor*, ramulis lignosis virgatis 4-angulatis glabris. *Folia* breviter petiolata, oblonga, acuta, crassa, rigide coriacea, 2-3 poll. longa, basi late rotundata, utrinque glabra, venulis immersis. *Cymæ* multifloræ, globosæ, in paniculam corymbosam 2-3 poll. diam. aggregatæ. *Calyx* sessilis, obconicus, brunneus, glaber, 2 lin. longus, dentibus parvis semiorbicularibus. *Stamina* calyce breviora. *Petala* oblonga, calyce breviora.

BRITISH CENTRAL AFRICA. Masuku plateau, alt 6500-7000 ft., Whyte.

498. *Dissotis Whytei*, Baker [Melastomaceæ]; ad *D. johnstonianam*, Baker fil., arcte accedit.

*Frutex* ramulis lignosis 4-angulatis scabris sulcatis validus. *Folia* brevissime petiolata, oblonga, acuta, 3 poll. longa, basi late rotundata, e basi ad apicem 5-nervia, facie viridia scabra, dorso flavo-viridia etiam scabra. *Cymæ* ad apices ramulorum in paniculam parvam congestæ; bracteæ cito deciduæ; pedicelli brevissimi, scabri. *Calycis* tubus campanulatus, 3 lin. longus, setis brevibus sparsis ascendentibus albidis munitus; lobi 5, semiorbiculares, parvi, patuli, persistentes. *Petala* obovato-cuneata, violacea, 6 lin. longa. *Antheræ* majores 3 lin. longæ, connectivo elongato basi antice producto.

BRITISH CENTRAL AFRICA. Mount Zomba, alt. 4000-6060 ft., Whyte.



499. *Memecylon flavovirens*, *Baker* [Melastomaceæ]; ad *M. angulatum*, Reichb., magis accedit.

*Frutex* omnino glaber. *Ramuli* lignosi, superne 4-angulati, nodis incrassati. *Folia* sessilia, obovato-cuneata, 2-3 poll. longa, apice obtusa vel minute emarginata, flavo-viridia, penninervia, venis primariis erecto-patentibus. *Gymæ* simplices, paucifloræ, axillares, breviter pedunculatæ vel sessiles; pedicelli calycibus longiores. *Calyx* campanulatus, limbo patulo obscure dentato, 1 lin. diam. *Fructus* globosus, 3-4 lin. diam., calyce persistenter coronatus.

BRITISH CENTRAL AFRICA. North Nyasa-land, *Whyte*.

500. *Trianthema nyasica*, *Baker* [Ficoideæ]; ad *T. crystallinum*, *Vahl*, accedit.

*Herba* perennis. *Caules* graciles, glabri, decumbentes ramosissimi. *Folia* sessilia, oblanceolata, subcarnosa, glabra, obtusa, 4 lin. longa. *Flores* permulti, sessiles, axillares. *Calycis* tubus infundibularis, 2 lin. longus; lobi 5, patuli, ovati, acuti, tubo æquilongi. *Capsula* conica, membranacea, unilocularis, polysperma, medio circumscissa. *Semina* atra, reniformia, rugosa.

BRITISH CENTRAL AFRICA. Monkey Bay, Lake Nyasa, alt. 1600 ft., *Whyte*.

501. *Peucedanum Buchananii*, *Baker* [Umbelliferæ]; ad *P. Grantii*, *Kingston*, magis accedit.

*Herba* gracilis, ramosa, erecta, glabra. *Caules* leves, profunde sulcati. *Folia* inferiora ignota; caulina breviter petiolata, ternata, segmentis lanceolatis acutis serratis. *Umbellæ* primariæ 6-8-radiatæ, bracteis involucri obsoletis; umbellæ secundariæ 8-9-floræ, bracteis linearibus minutis. *Calycis* dentes obsoleti. *Petala* alba. *Fructus* planus, oblongus, 3 lin. longus, jugis dorsalibus inconspicuis, lateralibus in alas latas pallidas productis.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., *Whyte*; Shire Highlands, *Buchanan* (1878 collection), 167.

502. *Peucedanum heracleoides*, *Baker* [Umbelliferæ]; ad *P. altum*, *Hiern*, magis accedit.

*Herba* erecta, elata, robusta, habitu *Heracleo Sphondylia* similis. *Caules* validi, multisulcati, superne scabri. *Folia* radicalia ignota; caulina simpliciter pinnata, segmentis 3-5, magnis obovatis crenatis, infimis furcatis. *Umbellæ* primariæ 15-20-radiatæ, involucri bracteis linearibus persistentibus 12-15 lin. longis; umbellæ secundariæ multifloræ, bracteis consimilibus multo minoribus. *Calycis* lobi obsoleti. *Petala* alba. *Fructus* obovatus, planus, 4 lin. longus, jugis dorsalibus 3 elevatis, 2 lateralibus in alas 1 lin. latas productis; vittæ solitariae; carpophorum tenue, medio furcatum.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., *Whyte*, 224.

503. *Peucedanum valerianæfolium*, *Baker* [Umbelliferae]; a speciebus reliquis africanis facile distinguitur foliis radicalibus integris caulinis lyrato-pinnatifidis.

*Herba* perennis, gracilis, erecta, glabra. *Caules* leves, profunde sulcati. *Folia* inferiora distincte petiolata, parva, oblonga, acuta, obscure crenata, basi longe cuneata; caulina lyrato-pinnatifida. *Umbellæ* primariæ 6–8-radiatæ, bracteis minutis linearibus albo-marginatis caducis; umbellæ secundariæ multifloræ, bracteis minutis linearibus. *Calycis* lobi obsoleti. *Petala* alba. *Fructus* oblongus, planus, jugis dorsalibus haud prominentibus, lateralibus in alas latas productis.

BRITISH CENTRAL AFRICA. Mount Zomba, alt. 4000–6000 ft., *Whyte*.

504. *Vernonia humilis*, *C. H. Wright* [Compositæ-Vernoniaceæ]; pubescens, foliis oblongis acutis glandulosis, capitulis 4–6-floris.

*Caulis* herbaceus vel sublignosus, pubescens, 10 poll. altus. *Folia* 1 poll. longa, 4–5 lin. lata, alterna, oblonga, basi apiceque acuta, brevissime petiolata, dentata, glandulis aureis pellucidis punctata. *Capitula* 4–6-flora, 4 lin. longa, in corymbos terminales disposita. *Involucrum* campanulatum, bracteis paucis imbricatis ovatis obtusis marginibus scariosis. *Corolla* regulariter tubulosa. *Antheræ* basi obtusæ, apice appendices triangulares scariosas gerentes. *Stylus* bipartitus. *Achenia* leviter striata. *Pappi* seti filiformes, scabri.

TROPICAL AFRICA. German East Africa: Lower plateau, north of Lake Nyasa, *J. Thomson*. British Central Africa: Mt. Mlanje, 6000 ft., *McClounie*, 30.

The leaves contain numerous pellucid glands, on the surface of which in the more recent specimens are golden globules. In older specimens the surfaces of the leaves appear densely punctate.

505. *Helichrysum concinnum*, *N. E. Brown* [Compositæ-Inuloideæ]; *H. cochleariformi*, DC., propinquum sed capitulis minoribus pallidioribus oblongis differt.

*Herba* 6 poll. alta, e basi ramosa. *Caules* graciles, erecti, supra paniculato-ramosi, laxè foliosi, lanato-tomentosi. *Folia* linearia vel lineari-oblonga, 3–6 lin. longa,  $\frac{1}{2}$ –1 lin. lata, sessilia, utrinque lanata, apice fusco-apiculata. *Capitula* 2 lin. longa,  $1\frac{1}{2}$ – $1\frac{3}{4}$  lin. diam., laxè comymboso-paniculata, pedicellata, oblonga, 50–60-flora. *Involucrum* campanulati squamæ luteo-fulvæ, bullato-imbricatæ, lineari-oblongæ, subacutæ, apice subcucullato-concavæ. *Flores* exteriores filiformes; interiores tubulosi, 5-dentati. *Pappi* setæ apice breviter incrassatæ.—*H. cochleariforme*, Harv. in *Harv. & Sond. Fl. Cap.* III. p. 220, non DC.

SOUTH AFRICA. Little Namaqualand: near Ezels Fontein and Rood Berg, 3500–4000 ft., November, *Drège*.

This plant was assigned by Harvey to *H. cochleariforme*, DC., but it is perfectly distinct from that species, although allied to it, differing in its more numerous, much smaller, oblong, and much



paler coloured flower-heads. In *H. cochleariforme*, DC. (*H. stellatum*, Less., var. *globiferum*, Harv.) the heads are 3-3½ lines in diameter, globose, and dark tawny brown in colour.

506. *Athrixia stenophylla*, Baker [Compositæ-Inuloideæ]; ad *A. debile*, DC., madagascariensem magis accedit.

*Herba* perennis, glabra. *Caules* graciles, stricti, erecti, 2-3-pedales, ad apicem foliati. *Folia* alterna, ascendentia, lineari-subulata, 1-2 poll. longa. *Capitula* homogama, discoidea, pauca, in corymbum terminalem disposita; pedunculi elongati, graciles, foliis paucis reductis præditi. *Involucrum* campanulatum 3 lin. longum, bracteis pauciseriatis lanceolatis glabris squarrosis. *Achenia* angulata, oblonga, glabra, ½ lin. longa. *Pappi* setæ rigidae, achenio duplo breviores, et paucae dilatatae, paleaceae.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., Whyte, 219.

507. *Schistostephium microcephalum*, Baker [Compositæ-Anthemideæ]; ad *S. heptalobum*, Benth. et Hook. fil., arcte accedit.

*Herba* perennis, erecta. *Caules* virgati, albo-pubescentes, ad apicem foliati. *Folia* alterna, simpliciter pinnata, parva, segmentis linearibus planis mucronatis, infimis 6-9 lin. longis, ¾ lin. latis. *Capitula* multa, homogama, discoidea, 2 lin. diam., in corymbum densum terminalem aggregata; pedicelli erecti, albo-pubescentes. *Involucrum* campanulatum, 1½ lin. longum, bracteis lanceolatis inæquilongis appressis albo-pilosis. *Corolla* lutea, ½ lin. longa, lobis parvis ovatis. *Achenia* glabra, angulata, ½ lin. longa.

BRITISH CENTRAL AFRICA. Between Kondowe and Karonga, Whyte.

508. *Schistostephium artemisiæfolium*, Baker [Compositæ-Anthemideæ]; ad *S. heptalobum*, Benth. et Hook. fil., magis accedit.

*Herba* perennis, erecta. *Caules* albo-pubescentes, ad apicem crebre foliati. *Folia* sessilia, ascendentia, alterna, bipinnatifida, 9-12 lin. longa, segmentis linearibus acutis rigidulis marginibus revolutis facie sparse dorso dense albo-pilosis. *Capitula* homogama, multiflora, 3 lin. diam., in corymbum terminalem disposita, pedicellis pedunculisque dense albo-pilosis. *Involucrum* campanulatum, 1½ lin. longum, bracteis lanceolatis rigidulis appressis inæquilongis albo-pubescentibus. *Corolla* lutea ½ lin. longa, lobis parvis ovatis. *Achenia* glabra, ½ lin. longa.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., Whyte, 225.

509. *Senecio* (Kleinia) *antitensis*, Baker [Compositæ—Senecionideæ]; a *S. melastomæfolia*, Baker, recedit pedunculo elongato, capitulis discoideis.

*Suffrutex* glaberrimus. *Folia* ad apices ramorum conferta, oblonga, subacuta, sessilia, basin versus sensim angustata, 15-18 lin. longa, siccitate rugosa, e basi 5-nervia. *Pedunculi* glabri, graciles, erecti, subpedales. *Capitula* pauca, discoidea, laxe

corymbosa, pedunculis capitulis longioribus erectis. *Involucrum* campanulatum, 3 lin. longum et latum, bracteis circiter 8 oblongo-linearibus obtusis. *Flores* involucro paulo longiores. *Pappus* albus, corollæ tubo æquilongus. *Achenia* matura ignota.

CENTRAL MADAGASCAR. Mount Antety, *Forsyth Major*, 678.

510. *Senecio* (*Kleinia*) *nyikensis*, *Baker* [Compositæ-Senecioideæ]; ad *S. longipedem*, *Baker*, somaliensem magis accedit.

*Herba* perennis, erecta, subcarnosa, tripedalis. *Caules* validi, glabri, in tertio inferiore crebre foliati. *Folia* producta, oblanceolato-oblonga, integra, subacuta, ad basin longe attenuata, majora 5-6 poll. longa 1 poll. lata; superiora reducta, remota, parva, linearia. *Capitula* discoidea, homogama, terminalia, pauca, corymbosa; pedunculi elongati, validi, erecti. *Involucrum* campanulatum, 1 poll. diam., bracteis 13-14 æqualibus (iis, quæ parvæ basales in speciebus hujus generis excitari solent, nullo modo excitatis) lanceolatis subcoriaceis glabris. *Corolla* lutea, 6 lin. longa. *Achenia* cylindrica, glabra, 2 lin. longa. *Pappus* albus, mollis, 6 lin. longus.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., *Whyte*.

511. *Dicoma nyikensis*, *Baker* [Compositæ-Mutisiaceæ]; ad *D. anomalam*, *Sond.*, et *D. quinquenerviam*, *Baker*, accedit.

*Herba* perennis, subpedalis, erecta. *Caules* simplices, graciles, albo-incani, ad apicem foliati. *Folia* alterna, sessilia, erecto-patentia, linearia, integra, 2-3 poll. longa, facie viridia glabra, dorso albo-incana. *Capitula* 1-3, terminalia, homogama, discoidea. *Involucrum* campanulatum, 9-12 lin. diam., bracteis multiseriatis appressis pubescentibus, interioribus lineari-subulatis, exterioribus sensim brevioribus lanceolatis. *Corolla* 5 lin. longa, lobis linearibus. *Achenia* angulata, pilis albis ascendentibus dense villosa. *Pappus* albidus, setosus, rigidulus, 4 lin. longus.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., *Whyte*.

512. *Dicoma megacephala*, *Baker* [Compositæ-Mutisiaceæ]; ad *D. nyikensem*, *Baker*, arcte accedit.

*Herba* perennis. *Caules* decumbentes, graciles, subpedales, sæpissime simplices, superne albo-incani, ad apicem foliati. *Folia* sessilia, linearia, integra, 2-3 poll. longa, facie viridia glabra, dorso albo-incana. *Capitula* terminalia, sæpissime solitaria, homogama, tubulosa, 12-18 lin. diam. *Involucrum* campanulatum, multiseriale, 15-18 lin. longum, bracteis rigidulis appressis imbricatis leviter albo-araneosis, interioribus linearibus, exterioribus lanceolatis. *Corolla* 6 lin. longa, cylindrica, lobis linearibus. *Achenia* angulata, pilis albis ascendentibus dense villosa. *Pappus* albus, setosus, rigidulus, 6 lin. longus.

BRITISH CENTRAL AFRICA. Between Kondowe and Karonga, alt. 2000-6000 ft., *Whyte*.



513. *Blæria microdonta*, *C. H. Wright* [Ericaceæ]; fruticosa, foliis oblongis glabris minute dentatis, sepalo uno (postico?) cæteris multo longiore.

*Frutex* ericoideus. *Rami* primum cinereo-tomentosi. *Folia* 1–1½ lin. longa, oblonga, glabra, minute dentata, subtus unisulcata, supra costa elevata, petiolis ½ lin. longis. *Inflorescentia* terminalis, (ebracteata?), floribus tetrameris circa 12 umbellatim dispositis, brevissime pedicellatis. *Sepala* libera, unum cæteris multo longius bracteolum simulans. *Corolla* suburceolata, 1 lin. longa, lobis late triangularibus. *Stamina* subexserta; antheræ bilobatæ, apice magniporosæ, basi aristatæ. *Ovarium* quadri-loculare, multiovulatum; stylus quam corolla duplo longior, stigmatibus subpeltatis.

BRITISH CENTRAL AFRICA. Mount Mlanje, 6000 ft. *McClounie*, 55, 75, 95.

The absence of glandular hairs on the leaves gives this species a very characteristic appearance. One of the four sepals greatly exceeds the others in size, and at first sight gives the flower the appearance of being unibracteolate. The odd sepal is often green and leaf-like and as long as the corolla.

514. *Oncinotis Batesii*, *Stapf* [Apocynaceæ]; proxima *O. nitidæ*, Benth., sed petiolis longis, foliis majoribus, nervatione minus conspicua, floribus paulo majoribus distincta.

*Scandens*, inflorescentiis exceptis glabra. *Rami* teretes, fusci. *Folia* oblonga, acuminata, basi acuta, 3½–4½ poll. longa, 1½–2 poll. lata, coriacea, utrinque nitidula, nervis utrinque 12 rectis submargine arcuatim connexis prominentibus, venis prominulis; petiolus longus. *Paniculæ* vel racemi terminales vel subterminales, 2–4 poll. longi, minute rufo-tomentelli; bractæ mox deciduæ; pedicelli 1–1½ lin. longi. *Calycis* segmenta ovato-elliptica vel elliptica, 1½ lin. longa, in dorso minute rufo-tomentella, dense ciliata. *Corolla* viridi-lutea; tubus intus dense albobillosus, 2 lin. longus; lobi tubo æquilongi, subobtusiusculi; squamæ fauciales lineares.

UPPER GUINEA. Cameroons, Efulen, *Bates*, 403.

515. *Cynanchum cucullatum*, *N. E. Brown* [Asclepiadeæ]; species gracilis, corollæ lobis cucullatis et corona reducta facile distinguitur.

*Caules* 1–2 ped. longi, graciles simplices vel basi ramosi, volubiles, glabri. *Folia* 1¾–3¾ poll. longa, ¾–1½ lin. lata, linearia, acuta, basi in petiolos 1–2½ lin. longos attenuata, plana nisi quod margines angustissime revolutæ sunt, glabra. *Cymæ* umbelliformes, ad nodos laterales, pedunculatæ, 6–12-floræ. *Pedunculi* 3–6 lin. longi, et pedicelli 2–2½ lin. longi, utrique unifariam puberuli; bractæ ¾ lin. longæ, lanceolato-subulatæ, glabræ. *Sepala* lanceolata, acuta, glabra. *Corolla* profunde 5-loba, 3 lin. diam., lobis 1¼–1¾ lin. longis ¾ lin. latis erecto-patentibus cucullatis apice incurvis acutiusculis glabris. *Corona* subsimplex, breviter cupuliformis, pentagona, levissime 5-loba, ½ lin. alta, lobis erectis obtusiusculis antheris

appressis nec adnatis. *Antheræ* erectæ, appendicibus membranaceis ovatis subacutis supra styli apicem convexum inflexis. *Pollinis* massæ pendulæ.

MADAGASCAR. Without locality, *Baron*, 2036.

The very reduced corona of this species slightly resembles that of *C. sarcostemmatoides*, K. Schum.

516. *Cynanchum longipes*, *N. E. Brown* [Asclepiadææ]; *C. polyantho*, K. Schum., affinis sed petiolis duplo longioribus et coronæ lobis incurvis facile distincta.

*Caules* volubiles, unifariam puberuli. *Folia* distantia; petiolus  $3-3\frac{1}{2}$  poll. longus, gracilis, minute puberulus; lamina  $2-3$  poll. longa,  $1\frac{1}{4}-2$  poll. lata, late ovata, breviter acuminata, basi cordata, venis minute puberulis. *Cymæ* umbelliformes, laxæ,  $5-12$ -floræ, pedunculatæ; pedunculi  $2-6$  lin. longi, unifariam puberuli; pedicelli  $\frac{1}{2}-1$  poll. longi, subfiliformes, puberuli. *Sepala*  $\frac{3}{4}$  lin. longa,  $\frac{1}{3}-\frac{1}{2}$  lin. lata, oblonga, acuta, glabra. *Corollæ* lobi  $2\frac{1}{2}$  lin. longi,  $\frac{3}{4}$  lin. lati, oblongi, obtusi, apiculati, utrinque glabri. *Corona*  $2$  lin. longa, quam columna staminum duplo longior, tubulosa,  $10$ -dentata, intus nuda, dentibus alternis majoribus apice plus minusve bifidis vel inæqualiter bidentatis, omnibus inarcuatis. *Antheræ* subsessiles, subquadratæ, appendicibus ovatis acutis supra apicem styli inflexis.

UPPER GUINEA. Lagos; Papalayito, *Millen* (1895 collection), 48.

517. *Cynanchum lineare*, *N. E. Brown* [Asclepiadææ]; *C. sibirico*, R. Br., similis, sed corona urceolata differt.

*Caules*  $9-12$  poll. alti, erecti vel apice subvolubiles, simplices vel pauciramosi, bifariam pubescentes. *Folia* patentia, subsessilia,  $1\frac{1}{2}-3$  poll. longa,  $\frac{1}{3}-1$  lin. lata, linearia, acuta, plana vel marginibus angustissime revoluta, fere glabra, in costis marginibusque pilis paucis aspersa. *Cymæ* umbelliformes, ad nodos laterales, pedunculatæ,  $10-20$ -floræ; pedunculi  $6-9$  lin. longi, pedicelli  $1\frac{1}{2}-2\frac{3}{4}$  lin. longi, utrique pilis curvatis minute pubescentes. *Sepala*  $\frac{3}{4}-\frac{3}{4}$  lin. longa,  $\frac{1}{3}$  lin. lata, ovata, acuta, subglabra vel parce pubescentia. *Corolla* usque ad  $\frac{3}{4}$  quinqueloba, lobis  $1-1\frac{1}{4}$  lin. longis  $\frac{1}{2}$  lin. latis lanceolato-oblongis obtusis glabris. *Corona*  $\frac{3}{4}$  lin. longa, urceolata, plicato-pentagona, ore contracto,  $5$ -dentata, intus nuda, dentibus ovatis obtusis cucullatis. *Staminum* columna quam corona duplo brevior, antheræ sessiles, deltoideæ, crassæ, appendicibus membranaceis anguste lanceolatis inflexis.

MADAGASCAR. Without locality, *Baron*, 109.

518. *Ceropegia fusiformis*, *N. E. Brown* [Asclepiadææ]; ab omnibus speciebus Africæ tropicæ tubo corollæ ad partem mediam fusiformi-inflato differt.

*Caulis* volubilis, glaber. *Foliorum* petioli  $6-8$  lin. longi; lamina  $1\frac{1}{4}-2\frac{1}{2}$  poll. longæ,  $\frac{3}{4}-1\frac{1}{4}$  poll. latæ, ovatæ vel elliptico-oblongæ, acutæ vel breviter acuminatæ, apiculatæ, basi cuneato-angustatæ, glabræ, marginibus parce et minute ciliolatæ. *Inflorescentia* subumbellatim  $6-10$ -flora; pedunculi  $1-1\frac{3}{4}$  poll. longi, laterales, glabri; pedicelli glabri,  $3-4$  lin. longi. *Sepala*



2 lin. longa, elongato-ovata, in subulam complicatam attenuata. *Corollæ* tubus  $1\frac{1}{2}$  poll. longus, curvatus, basi ovoideo-inflatus, 2 lin. diam., ad partem mediam fusiformi-inflatus 3 lin. diam., extus glaber, intus parte inferiore hirtus; lobi 4– $4\frac{1}{2}$  lin. longi, late deltoidei, apice connati, valde replicati, glabri. *Coronæ* lobi exteriores  $\frac{1}{2}$  lin. longi,  $\frac{3}{4}$  lin. lati, late ovato-deltoidei, apice minute bifidi vel emarginati, intus hirti; lobi interiores  $1\frac{1}{3}$  lin. longi, erecto-conniventes, quam columna staminum multo longiores, oblongo-lineares, basi angustati, dorso hirti.

UPPER GUINEA. Lagos; Abeokuta, *Millen* (1895 collection), 89.

519. *Belmontia divaricata*, *Baker* [Gentianaceæ]; a *B. emir-nensi*, *Baker*, recedit foliis ovatis, ramis paniculæ divaricatis flexuosis.

*Herba* perennis, glabra. *Caules* acute tetragoni. *Folia* caulina ovata, acuta, sessilia, opposita, 2– $2\frac{1}{2}$  poll. longa, e basi trinervia. *Panicula* ampla, bifurcata, ramis cymosis longe pedunculatis, pedicellis elongatis. *Sepala* cuspidata, 4 lin. longa, dorso late alata. *Corollæ* tubus ampullæformis, calyci subæquilongus; limbus expansus 12–15 lin. diam, lobis obovatis acutis patulis. *Antheræ* lineari-oblongæ, 2 lin. longæ, e tubo corollæ breviter protrusæ, filamentis brevibus filiformibus. *Stylus* filiformis, stigmatē capitato.

MADAGASCAR. Forest of Isohimanitra, province of Tanala, *Forsyth Major*.

This is much the finest and most floriferous species of the genus.

520. *Tachiadenus parviflorus*, *Baker* [Gentianaceæ]; a speciebus reliquis recedit floribus parvis.

*Herba* perennis, glabra, radice lignosa. *Caules* graciles, tetragoni, cæspitosi, 6–9 poll. longi. *Folia* opposita, brevissime petiolata, oblongo-lanceolata, acuta, 5–6 lin. longa,  $1\frac{1}{2}$ –2 lin. lata, firmula, glabra, basi cuneata. *Flores* solitarii, axillares, pedicellis ascendentibus. *Calyx*  $1\frac{1}{2}$  lin. longus, tubo brevissimo, lobis lanceolatis acuminatis. *Corollæ* tubus cylindricus, apice dilatatus, 8–9 lin. longus; lobi albi, patuli, rotundati, cuspidati, 5–6 lin. longi. *Genitalia* in corollæ tubo inclusa. *Fructus* ignotus.

MADAGASCAR. Ambohimombo, province of Tanala, *Forsyth Major*, 403.

521. *Swertia nummularifolia*, *Baker* [Gentianaceæ]; a *S. pumila*, *Hochst.*, recedit foliis caulinis 4–5 jugis, cymis condensatis paucifloris.

*Herba* perennis, glabra. *Caules* erecti, 4–6 poll. longi, simplices vel profunde furcati, graciles, tetragoni. *Folia* basalia rosulata, caulina 4–5-juga, orbicularia, sessilia, obtusa, basi rotundata, firmula, viridia, 3–4 lin. longa et lata. *Cymæ* paucifloræ, condensatæ, terminales. *Sepala* oblonga, obtusa, herbacea, viridia, 2 lin. longa. *Corollæ* tubus campanulatus, calyci æquilongus; lobi obovati, obtusi, lutei, purpureo tincti, tubo paulo longiores. *Antheræ* e corollæ tubo protrusæ, lobis triplo breviores.

MADAGASCAR. Mount Antety, above Ambositra, *Forsyth Major*, 641.

Adds this genus to the flora of Madagascar. There are several species on the mountains of Tropical Africa.

522. *Solanum nakurense*, *C. H. Wright* [Solanaceæ]; fruticosum, ramis glabris, foliis parvis oblongis leviter sinuatis, antheris demum rimis dehiscentibus.

*Frutex* 3-pedalis. *Rami* tenues, glabri. *Folia* 8 lin. longa, 3 lin. lata, approximata, breviter petiolata, oblonga, leviter sinuata, utrinque pilis paucis simplicibus vestita. *Cymæ* subumbellatæ, prope ramorum apices productæ, pedicellis incrassatis. *Calyx* 2 lin. diam.; lobi anguste triangulares, tubo æquilongi, subglabri. *Corolla* rotata (alba?), 5 lin. diam.; lobi 5, angusti, acuti, subtus pubescentes. *Antheræ* subsessiles, oblongæ, primum poris magnis terminalibus demum rimis longitudinalibus dehiscentes. *Ovarium* oblongum, glabrum; stylus quam stamina duplo longior.

BRITISH EAST AFRICA. Nakuru, *Scott Elliott*, 6800.

Allied to *S. carense*, Dun., but much smaller in all its parts and having perfectly glabrous branches.

523. *Ipomœa operosa*, *C. H. Wright* [Convolvulaceæ]; scandens *I. involucreata*, Beauv., proxima, sed dense tomentosa, bracteis cymbiformibus subtus longe pilosis differt.

*Suffrutex* scandens, dense tomentosus. *Folia* cordata, acuta, supra pilis appressis vestita, subtus dense tomentosa, 4-5 poll. longa, 3-4 poll. lata, petiolis 2-3 poll. longis. *Flores* capitati; pedunculi 2½ poll. longi; bractæ cymbiformes, acutæ, subtus pilis longis præsertim ad basin vestitæ. *Calycis* lobi subulati, quam tubus paulo longiores, ad apicem dense pilosi. *Corolla* campanulata, 1½ poll. longa, 1¼ poll. diam., quam calyx 4-plo longior. *Stamina* quam corolla dimidio breviora.

BRITISH CENTRAL AFRICA. Zomba, *Kirk*, *Whyte*; Nyasaland, *Buchanan* (1891 collection), 370.

Mr. A. Whyte states that "this plant is a most troublesome weed, with a long spongy tap root, most difficult to eradicate from Zomba gardens."

524. *Tecoma Whytei*, *C. H. Wright* [Bignoniaceæ]; fruticosa, foliolis late lanceolatis acutis basi rotundatis obscure crenatis.

*Folia* pinnatim 4-5-juga; foliola breviter petiolata, subtus ad nervorum axillas pilosa, 1 poll. longa, 7 lin. lata. *Racemi* terminales, bracteolis subulatis; pedunculi 5 poll. longi; pedicelli 5 lin. longi. *Calyx* campanulatus, 6 lin. longus, dentibus 5 late triangularibus acutis. *Corollæ* tubus 1¼ poll. longus, curvatus, superne dilatatus; lobi 6 lin. longi, oblongi, apice rotundati, 2 superiores erecti, 3 inferiores patentes. *Stamina* lobis superioribus corollæ æquilonga; filamenta interne pilosa. *Ovarium* parvum, oblongum.

BRITISH CENTRAL AFRICA. Zomba Plateau, 5000 ft., *Whyte*.

The flowers of this species resemble those of *T. Nyassæ*, Oliv., but the shape of the leaflets is quite different.



525. *Plantago tanalensis*, *Baker* [Plantaginææ]; a *P. palmata*, Hook. fil., recedit foliis subintegris breviter petiolatis, spicis laxis.

*Herba* perennis, fibris radicalibus multis gracilibus. *Folia* 8–10, rosulata, breviter petiolata, subrotunda, obtusa,  $1\frac{1}{2}$ –2 poll. longa, utrinque pubescentia, siccitate rufescentia, e basi quinquenervia. *Peduncululi* graciles, glabri, 6–9 poll. longi. *Spicæ* cylindricæ, interdum 8–9 poll. longæ, sursum densifloræ, deorsum laxifloræ; bracteæ  $\frac{3}{4}$  lin. longæ, sepalis consimiles. *Sepala* oblonga, obtusa, 1 lin. longa, glabra, medio brunnea, marginibus late albida. *Corollæ* lobi parvi, oblongi, scariosi, patuli. *Stylus*  $\frac{1}{2}$  lin. longus. *Capsula* oblonga, glabra, disperma.

MADAGASCAR. Mount Antety and Ambohimombo forest, province of Tanala, alt. 1450–1560 ft., *Forsyth Major*, 380, 633, 708; Betsileo-land, *Hildebrandt*, 3906.

There are very few species of *Plantago* in Madagascar and tropical Africa. *P. palmata*, to which this is nearly allied, is a mountain species common to both sides of the continent.

526. *Celosia pandurata*, *Baker* [Amarantaceæ]; ad *C. argenteam*, Linn., arcte accedit.

*Herba* erecta. *Caules* ramosi, pubescentes. *Folia* petiolata, panduriformia, inferiora 3–4 poll. longa, lobis basalibus magnis ovatis vel oblongis obtusis. *Spicæ* densæ, breves, simplices, terminales; bracteæ ovatæ, acutæ, albæ, floribus breviores. *Perianthium* 2–2 $\frac{1}{2}$  lin. longum, segmentis oblongo-lanceolatis acutis, albis, carina concolore trinervata. *Ovarium* ampullæforme, in stylum longum sensim attenuatum, stigmate minuto.

PORTUGUESE EAST AFRICA. Zambesi valley, between Tette and the coast, *Kirk*.

527. *Celosia cuneifolia*, *Baker* [Amarantaceæ]; floribus magnis et stylo elongato *C. argenteæ*, Linn., proximata, recedit habitu suffruticoso.

*Suffrutex* sarmentosus. *Ramuli* graciles, elongati, sursum pubescentes. *Folia* parva, petiolata, oblonga, acuta, obscure pubescentia, ad basin angustata. *Cymæ* in spicas oblongas terminales aggregatæ; bracteæ minutæ. *Perianthium* album, 2 lin. longum, segmentis oblongis 2 lin. longis, carina concolore trinervata. *Ovarium* ampullæforme; stylus 2 lin. longus. *Utriculus* viridis, perianthio valde brevior.

PORTUGUESE EAST AFRICA. Lower part of the valley of the Shire, *Meller*; Moramballa and Shupanga, *Kirk*.

528. *Celosia chenopodiifolia*, *Baker* [Amarantaceæ]; ad *C. trigynam*, Linn., accedit; recedit floribus duplo minoribus, fructu e perianthio exserto.

*Caules* gracillimi, straminei, glabri. *Folia* perparva, oblonga, integra, ad basin attenuata. *Cymæ* paucifloræ, in spicas terminales elongatas sursum densas aggregatæ. *Perianthium* album,

$\frac{3}{4}$  lin. longum, segmentis oblongis obtusis viridi-carinatis. *Utriculus* viridis, globosus, e perianthio exsertus; stylus brevissimus.

ANGOLA. Chella mountains, *Sir H. H. Johnston*.

529. *Celosia semperflorens*, *Baker* [Amarantaceæ] ad *C. trigynum*, Linn., accedit; recedit spicis densis, floribus duplo minoribus et stylis duobus.

*Herba*, caulibus erectis ramosissimis glabris. *Folia* petiolata, oblonga vel ovato-lanceolata, integra, basi cuneata, glabra, viridia vel sanguinea, inferiora 2 poll. longa. *Spicæ* breves, densæ, simplices vel basi compositæ; bracteæ ovatæ, minutæ. *Perianthium* album,  $\frac{3}{4}$  lin. longum, segmentis oblongis obtusis haud viridi-carinatis. *Utriculus* globosus, perianthio æquilongus; styli 2, brevissimi.

BRITISH CENTRAL AFRICA. Abundant at Blantyre, flowering nearly all the year, *Buchanan* (1881 collection), 52.

530. *Celosia minutiflora*, *Baker* [Amarantaceæ]; ad *C. semperflorentem*, *Baker*, (vide supra) accedit; recedit spicis laxis, fructu exserto.

*Caules* graciles, elongati, glabri, parum ramosi. *Folia* perparva, oblonga, subsessilia, basi angustata vel rotundata. *Cymæ* paucifloræ, in glomerulos globosos congestæ, glomerulis in spicis elongatis laxis dispositis; bracteæ ovatæ, minutæ. *Perianthium* album,  $\frac{3}{4}$  lin. longum, segmentis oblongis obtusis haud viridi-carinatis. *Utriculus* globosus, viridis, e perianthio exsertus; styli 2, brevissimi.

UGANDA. *Hannington*.

531. *Celosia loandensis*, *Baker* [Amarantaceæ]; ad *C. trigynum*, Linn., accedit; recedit habitu suffruticoso, floribus minoribus, stylis 2, fructu exserto.

*Suffrutex*, ramis elongatis. *Ramuli* multi, breves, patuli, glabri. *Folia*, petiolata, ovata, acuminata, glabra, basi cordata. *Cymæ* in glomerulos globosos congestæ, glomerulis in spicis brevibus terminalibus interruptis dispositis; bracteæ ovatæ, perianthio breviores. *Perianthium* album, 1 lin. longum, segmentis ovato-oblongis; carina viridi-brunnea. *Utriculus* globosus, e perianthio exsertus; styli 2, brevissimi.

WEST TROPICAL AFRICA. Angola; province of Loanda, under 1000 ft., *Welwitsch*, 6537 b. Lower Congo, *C. Smith*.

532. *Celosia nana*, *Baker* [Amarantaceæ]; annua, stigmatibus 2 sessilibus.

*Herba* annua, glabra, ramosissima. *Ramuli* 3-4 poll. longi. *Folia* perparva, oblonga, subsessilia, ad basin angustata. *Cymæ* laxæ, in paniculas terminales interruptas aggregatæ; bracteæ ovatæ, minutæ. *Perianthium* album,  $\frac{3}{4}$  lin. longum, segmentis oblongis obtusis obscure carinatis. *Utriculus* globosus, perianthio æquilongus.

ANGOLA. *Welwitsch*, 6566.



533. *Hermstædtia Welwitschii*, *Baker* [Amarantaceæ]; ad *H. linearem*, Schinz, arcte accedit; recedit floribus majoribus lobisque staminiferis longioribus tricuspidatis.

*Herba* perennis glabra. *Caules* graciles, virides. *Folia* sparsa, sessilia, linearia, 1–2 poll. longa. *Spicæ* densæ, simplices, 1–4 poll. longæ; bracteæ ovatæ vel ovato-lanceolatæ, perianthio valde breviores. *Perianthium* niveum, 3 lin. longum, segmentis ovato-oblongis acutis dorso distincte trinervatis. *Cupula staminifera* brevis, lobis elongato-quadratis tricuspidatis.

PORTUGUESE WEST AFRICA. Province of Mossamedes, *Welwitsch*, 6502.

534. *Sericocoma Welwitschii*, *Baker* [Amarantaceæ]; ovario oblongo haud cornuto, foliis oblongis membranaceis.

*Herba* perennis. *Ramuli* oppositi, pubescentes. *Folia* breviter petiolata, opposita, oblonga, 12–18 lin. longa, utrinque pilosa. *Glomeruli* axillares et in paniculam oblongam terminalem aggregati; flores steriles spinosi, straminei; bracteæ ovatæ, perianthio valde breviores. *Perianthium* 2 lin. longum, basi lanosum, segmentis rigidis lanceolatis viridibus albo-marginatis. *Staminodia* quadrata. *Ovarium* oblongum; stylus elongatus, stigmate capitato.

PORTUGUESE WEST AFRICA. Province of Mossamedes, *Welwitsch*, 6501.

535. *Cyathula Mannii*, *Baker* [Amarantaceæ]; ad *C. cylindricam*, Moq., et *C. schimperianam*, Moq., arcte accedit.

*Herba* perennis, ramosa, 6–10 pedalis. *Ramuli* sursum pilis reflexis vestiti. *Folia* breviter petiolata, ovata vel oblonga, acuta, utrinque dense pilosa, inferiora 2–3 poll. longa. *Glomeruli* in spicas oblongas terminales aggregati, supremis exceptis reflexi; florum sterilium spinæ floribus fertilibus longiores, apice hamatæ; bracteæ scariosæ, ovatæ, acuminatæ, albidæ. *Perianthium* album, 2 lin. longum, segmentis oblongo-lanceolatis pilosis.

TROPICAL AFRICA. Cameroon mountains, alt. 7000 ft., and Fernando Po, alt. 10000 ft., *Mann*; Ruwenzori, alt. 6000–8000 ft., *Scott Elliot*, 7702.

I believe this to be distinct from both the above-mentioned nearly allied eastern species.

536. *Cyathula polycephala*, *Baker* [Amarantaceæ]; ad *C. globuliferam*, Moq., accedit.

*Herba* perennis. *Ramuli* dense pilosi. *Folia* breviter petiolata, oblonga, acuta, utrinque dense pilosa. *Glomeruli* in capitula globosa 1 poll. diam. aggregati; capitula 10–15, in paniculas spicatas terminales disposita; bracteæ ovatæ, scariosæ, albæ, floribus breviores. *Perianthium* album, 3 lin. longum, segmentis lanceolatis acuminatis scariosis. *Spinæ* hamatæ, perianthio æquilongæ.

BRITISH EAST AFRICA. Kapti plateau, Masai-land, alt. 5000–6000 ft., *Joseph Thomson*.

537. *Psilotrichum concinnum*, *Baker* [Amarantaceæ]; a *P. africano*, Oliv., recedit, habitu herbaceo, foliis multo minoribus, spicis omnibus terminalibus.

*Herba* perennis, ramosa. *Ramuli* glabri, graciles, pallide virides. *Folia* parva, breviter petiolata, oblonga, acuta vel obtusa, sparse pubescentia. *Spicæ* parvæ, densæ, oblongæ, omnes terminales, rhachi subrecto dense piloso; bracteæ parvæ, late ovatæ. *Perianthium* album, 2 lin. longum, segmentis oblongo-lanceolatis rigidis pubescentibus. *Staminodia* abortiva. *Stylus* brevissimus, stigmatē capitato.

BRITISH CENTRAL AFRICA. Blantyre, *Last*.

538. *Psilotrichum trichophyllum*, *Baker* [Amarantaceæ]; a *P. africano*, Oliv., recedit foliis firmis subsessilibus utrinque dense pubescentibus.

*Suffrutex*, ramulis lignosis dense pubescentibus. *Folia* subsessilia, oblonga,  $1\frac{1}{4}$ –2 poll. longa, acuta, firmula, utrinque dense pubescentia. *Spicæ* densæ, paucifloræ, in paniculam parvam terminalem dispositæ. *Perianthium* album, 2 lin. longum, segmentis oblongo-lanceolatis rigidis pubescentibus.

PORTUGUESE EAST AFRICA. Lower part of the Zambesi valley at Shamo, *Kirk*.

539. *Psilotrichum debile*, *Baker* [Amarantaceæ]; a *P. africano* Oliv., recedit foliis obovatis subsessilibus, ramulis elongatis debilibus.

*Herba* perennis. *Ramuli* elongati, debiles, pubescentes. *Folia* subsessilia, obovato-cuneata, circiter 1 poll. longa, obtusa, minute mucronata, utrinque pubescentia. *Spicæ* terminales, densæ, oblongæ, 1 poll. longæ, rhachi subrecto dense piloso; bracteæ ovatæ, pubescentes, floribus paulo breviores. *Perianthium* album,  $2\frac{1}{2}$  lin. longum, segmentis oblongo-lanceolatis rigidis dense pubescentibus. *Staminodia* quadrata, pilosa. *Stylus* elongatus, stigmatē capitato.

ANGOLA. *Welwitsch*, 6570.

540. *Psilotrichum rubellum*, *Baker* [Amarantaceæ]; a *P. schimperiano*, Engl., recedit rhachibus spicarum lanosis.

*Herba* perennis, erecta. *Caules* graciles, sulcati, sparse pubescentes. *Folia* fasciculata, sessilia, linearia, plana, 1–2 poll. longa, viridia, subglabra. *Spicæ* parvæ, densæ, terminales, rhachibus lanosis; bracteæ ovatæ, parvæ. *Perianthium* rubrum, glabrum, 2 lin. longum; segmentis rigidis oblongo-lanceolatis. *Staminodia* quadrata. *Stylus* elongatus, stigmatē capitato.

ANGOLA. Province of Huilla, alt. 3800–5500 ft., *Welwitsch*, 6509. Province of Humpata, Chella mountains, *Sir H. H. Johnston*.

541. *Psilostachys Kirkii*, *Baker* [Amarantaceæ]; ad *P. gnaphalobryam*, Hochst., (*Psilotrichum cordatum*, Moq.) accedit.

*Suffrutex* erecta. *Ramuli* lignosi, teretes, glabri. *Folia*



petiolata, cordato-ovata, 1 poll. longa, acuta, dorso dense pubescentia. *Panicula* ampla, laxa, ramis ascendentibus, ramulis capillaribus flexuosis, spicis paucifloris. *Perianthium* viride, pilosum,  $1\frac{1}{2}$  lin. longum, segmentis exterioribus oblongo-lanceolatis rigidis dorso distincte trinervatis.

BRITISH EAST AFRICA. Sabaki River, Melinda, near Mombasa, *Kirk*.

542. *Achyranthes breviflora*, *Baker* [Amarantaceæ]; ad *A. oblanceolata*, Schinz, et *A. Carsoni*, *Baker*, magis accedit.

*Herba* perennis. *Caules* graciles, virgati, glabri, albidi, viridistriati, angulati. *Folia* petiolata, linearia, integra, glabra, ad basin attenuata. *Spicæ* densæ, primum oblongæ, demum cylindricæ, 2–3 poll. longæ; bracteæ lanceolatæ, scariosæ, deflexæ, glabræ,  $1\frac{1}{2}$  lin. longæ; bracteolæ ovatæ, ascendentes, perianthio duplo breviores. *Perianthii* segmenta rigida, lanceolata, glabra, 2 lin. longa, medio viridia, marginibus pallide rubra. *Stamina* perianthio paulo breviora. *Ovarium* ovoideum; stylus elongatus.

BRITISH CENTRAL AFRICA. Between Kondowe and Karonga, alt. 2000–6000 ft., *Whyte*.

543. *Achyranthes Carsoni*, *Baker* [Amarantaceæ]; ad *A. oblanceolata*, Schinz, arcte accedit.

*Herba* perennis, pedalis. *Caules* simplices vel furcati, erecti ad nodos solum pilosi. *Folia* paucijuga, sessilia, lanceolata vel oblanceolata, subcoriacea, viridia, glabra, centralia 1–2 poll. longa 3–4 lin. lata. *Spicæ* simplices, densifloræ, terminales, longe pedunculatæ, 1–3 poll. longæ, floribus inferioribus patulis haud reflexis; bracteæ parvæ, ovatæ, acutæ, albæ. *Perianthium* album, glabrum, 3 lin. longum, segmentis rigidis lanceolatis, carina distincte trinervata. *Stamina* perianthio multo breviora. *Stylus* elongatus, stigmate capitato.

BRITISH CENTRAL AFRICA. Fwambo, Lake Tanganyika, alt. 5000–6000 ft., *Carson* (1893 collection), 8.

544. *Polygonum (Persicaria) nyikense*, *Baker* [Polygonaceæ]; ad *P. Poiratii*, Meissn., accedit; recedit spicis cylindricis, in paniculam brevem aggregatis.

*Caulis* ramosus, modice robustus, glaber. *Folia* lanceolata, 3–4 poll. longa, utrinque setis sparsis appressis vestita; ochrææ magnæ, ad apicem appressæ, dorso pilis sparsis munitæ, margine setis densis ciliatæ. *Spicæ* subdensæ, 1–2 poll. longæ, 8–10, in paniculam brevem aggregatæ; bracteæ superiores glabræ, inferiores margine setis ciliatæ. *Perianthium*  $1\frac{1}{2}$  lin. longum, segmentis oblongis rubro-viridibus haud glanduloso-punctatis. *Nux* lenticularis, orbicularis, castaneus, nitidus; styli 2.

BRITISH CENTRAL AFRICA. Nyika mountains, 4000–6000 ft., *Whyte*.

545. *Pilea floribunda*, *Baker* [Urticaceæ-Urticeæ]; a speciebus omnibus africanis facile distinguitur foliis magnis breviter petiolatis cymis in paniculam laxam dispositis.

*Caules* sublignosi, pubescentes. *Folia* oblonga, acuta, breviter petiolata, 8-9 poll. longa, medio  $2\frac{1}{2}$ -3 poll. lata, ad basin sensim angustata, obscure crenata, facie glabrata, dorso pubescentia, e basi ad medium triplinervia. *Panicula* axillares, monoicae, foliis paulo breviores, ramis pubescentibus patulis vel reflexis, cymis ad apices ramulorum congestis. *Perianthii* segmenta ovata, acuta, pubescentia,  $\frac{3}{4}$  lin. longa. *Stamina* perianthio æquilonga. *Flores* feminei et fructus ignoti.

MADAGASCAR. Forest of Ambohimombo, province of Tanala, alt. 1450-1560 ft., *Forsyth Major*, 270.

546. *Gymnosiphon squamatum*, *C. H. Wright* [Burmanniaceæ]; *G. usambarico*, Engl., proximum, sed perianthii lobis exterioribus integris differt.

*Herba* debilissima, glabra. *Caulis* ascendens, 3-4 poll. longus. *Folia* ad squamas  $\frac{1}{2}$  lin. longas reducta. *Inflorescentia* terminalis, cymosa. *Perianthium* infundibuliforme, 3 lin. longum; lobi exteriores integri, ovati, interiores desunt. *Stamina* perianthii faucibus affixa. *Ovarium* globosum, uniloculare, multiovulatum; stylus perianthii tubo æquilongus, stigmate trilobato. *Capsula* globosa, 2 lin. diam.

WEST TROPICAL AFRICA. Sibange Farm, Gaboon, *Soyaux*, 167, 168; Efulen, Cameroons, *Bates*, 311.

547. *Syringodea luteo-nigra*, *Baker* [Irideæ]; ad *S. bicolorum*, *Baker*, magis accedit: recedit segmentis perianthii tubo paulo longioribus.

*Cormus* globosus, 9 lin. diam., tunicis membranaceis brunneis. *Folia* basalia 4-5, teretia, gracilia, rigida, glabra, flore longe superantia, pedalia,  $\frac{1}{2}$  lin. diam. *Pedunculus* brevis, strictus, erectus, uniflorus, 2-3 poll. longus; spathæ valvæ 2, lineares, æquilongæ, sursum rigidæ, deorsum membranaceæ. *Perianthii* tubus gracilis, cylindricus, apice dilatatus, 14-15 lin. longus; segmenta oblonga, tubo longiora, aurantiaca, dorso nigrescentia, 15-18 lin. longa. *Genitalia* segmentis distincte breviora.

CAPE COLONY. Queenstown division, on the summit of the Andries Berg, near Baileytown, alt. 6350 ft., and on the Hangklip Mountains, alt. 6600 ft., *Galpin*, 1516.

548. *Aristea nyikensis*, *Baker* [Irideæ]; ad *A. paniculatam*, *Pax*, (*A. Lastii*, *Baker*) magis accedit.

*Caulis* pedalis, applanatus, angustissime alatus, foliis 4-5 remotis præditus. *Folia* linearia, ascendentia, media 8-9 poll. longa 3-4 lin. lata, superiora sensim minora. *Panicula* laxa, thyrsoides, capitulis florum 3-4 supremis sessilibus; pedunculi florum inferiorum breves, erecto-patentes; pedicelli 2 lin. longi. *Perianthium* ignotum. *Capsula* oblongo-globosa, 3 lin. longa, obtuse angulata, valvis demum torulosis.

BRITISH CENTRAL AFRICA. Nyika plateau, 6000-7000 ft., *Whyte*.



549. *Aristea zombensis*, *Baker* [Irideæ]; ad *A. paniculatam*, *Pax*, etiam accedit.

*Folia* radicalia 5-6, linearia, rigidula, pedalia, 3 lin. lata, conspicue nervata, nervis crebris. *Caulis* pedalis, gracilis, angulatus, foliis 3-4 ascendentibus præditus, infimo elongato, reliquis valde reductis. *Capitula* florum superiora sessilia, infimum breviter pedunculatum; bracteæ exteriores magnæ, oblongæ, integræ, marginibus late-membranaceæ. *Perianthium* cæruleum 3 lin. longum, segmentis oblongis. *Capsula* oblonga, parva, subsessilis, obtuse angulata.

BRITISH CENTRAL AFRICA. Mount Zomba, alt. 4000-6000 ft., *Whyte*.

550. *Gladiolus* (*Hebea*) *stenophyllus*, *Baker* [Irideæ]; a *G. eduli*, *Benth.*, recedit foliis subteretibus staminibus perianthio paulo brevioribus.

*Cormus* globosus, parvus, tunicis fibrosis supra collum longe productis. *Folia* basalia rigida, subteretia, glabra, facie canaliculata, subpedalia. *Caulis* gracilis, simplex, folio unico reducto vaginante præditus, 6-9 poll. altus. *Spica* simplex, secunda, multiflora, 2-4 poll. longa; spathæ valva exterior parva, oblongo-lanceolata, 3-4 lin. longa. *Perianthium* rubellum, 13-14 lin. longum, tubo brevi anguste infundibulari 5 lin. longo, segmentis superioribus oblongis cuspidatis basi cuneatis, segmentis inferioribus 3 oblongeolatis longe unguiculatis superioribus æquilongis. *Stamina* limbo paulo breviora.

CAPE COLONY. Queenstown Div.: Hangklip Mountains, alt. 5800 ft., *Galpin*, 1769.

551. *Gladiolus* (*Eugladiolus*) *Whytei*, *Baker* [Irideæ]; ad *G. brevifolium*, *Jacq.*, et *G. atropurpureum*, *Baker*, accedit.

*Cormus* globosus, 1 poll. diam., tunicis exterioribus fibris robustis parallelis percursis. *Folia* radicalia ad bracteas reducta. *Caulis* gracilis, pedalis, foliis 3-4 rudimentariis apicibus liberis anguste linearibus brevissimis præditus. *Spica* simplex, laxa, secunda, 6-12 poll. longa; spathæ valva exterior viridis, oblongo-navicularis, 6-12 lin. longa. *Perianthium* pollicare; tubus curvatus, infundibularis, 4 lin. longus; segmenta superiora oblonga, obtusa, atro-purpurea, cucullata, basi cuneata; 3 inferiora paulo longiora, alba, limbo parvo medio atro-purpureo, ungue angusto elongato. *Stamina* segmentis superioribus paulo breviora.

BRITISH CENTRAL AFRICA. Mount Zomba and Mount Malosa, alt. 4000-6000 ft., *Whyte*.

552. *Gladiolus venulosus*, *Baker* [Irideæ]; ad *G. zanzebaricum*, *Baker*, (*G. Kirkii*, *Baker*, *Handb. Irid. p.* 229) magis accedit.

*Cormus* ignotus. *Caulis* gracilis, sesquipedalis, foliis 5-6 brevibus deorsum vaginantibus sursum liberis anguste linearibus rigidulis glabris præditus. *Spica* laxa, secunda, 3-6 poll. longa; spathæ valvæ exteriores lanceolatae, 9-18 lin. longæ, dimidio inferiori scariosæ, acumine herbaceæ. *Perianthium* album, lilacino tinctum et venis pulchre lilacinis percursum; tubus

leviter curvatus, 6 lin. longus; segmenta superiora oblongo-spathulata, haud cucullata, 12-15 lin. longa; inferiora consimilia, vix minora. *Stamina* limbo duplo breviora.

BRITISH CENTRAL AFRICA. Near Fort Hill, Nyasa-Tanganyika plateau, 35000-4000 ft., *Whyte*.

553. *Gladiolus nyikensis*, *Baker* [Irideæ]; ad *G. Grantii*, *Baker*, magis accedit.

*Cormus* globosus, parvus. *Caulis* gracilis, pedalis, foliis 6-8 anguste linearibus rigidulis glabris præditus, infimo pedali, superioribus sensim minoribus. *Spica* laxa, secunda, semipedalis; spathæ valvæ exteriores 12-15 lin. longæ, basi ovatæ, scariosæ, acuminibus herbaceæ, virides. *Perianthium* album, plus minusve lilacino tinctum; tubus curvatus, infundibularis, semipollicaris; segmenta superiora oblongo-spathulata, subacuta, haud cucullata, 15 lin. longa; inferiora consimilia, vix minora. *Stamina* limbo triplo breviora.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000-7000 ft., *Whyte*.

554. *Gladiolus (Eugladiolus) Johnstoni*, *Baker* [Irideæ]; ad *G. quartinianum*, A. Rich., magis accedit; recedit floribus minoribus rubris segmentis superioribus minus cucullatis staminibus brevibus.

*Folia* radicalia lanceolata, rigide coriacea, 12-15 lin. lata, venis marginibusque incrassatis stramineis. *Caulis* simplex, foliis paucis rudimentariis vaginantibus præditus. *Spica* simplex, laxa, secunda, 6-9 poll. longa; spathæ valva exterior viridis 9-15 lin. longa. *Perianthium* rubrum; tubus curvatus, infundibularis, 9 lin. longus; segmenta superiora oblonga, leviter cucullata, 2 poll. longa; segmenta inferiora multo minora. *Stamina* limbo triplo breviora.

BRITISH CENTRAL AFRICA. Mount Zomba and Mount Malosa, alt. 4000-6000 ft., *Whyte*.

A fine plant, which would be well worth introducing into cultivation.

555. *Gladiolus masukuensis*, *Baker* [Irideæ]; ad *G. luridum* Welw., magis accedit.

*Folia* radicalia linearia, rigida, glabra, sesquipedalia, 3 lin. lata, venis marginibusque incrassatis stramineis. *Caulis* pedalis et ultra, interdum furcatus, foliis paucis productis præditus, infimo elongato. *Spica* laxa, secunda, 6-9 poll. longa; spathæ valvæ exteriores firmulæ, virides, oblongæ vel lanceolatæ, 9-12 lin. longæ. *Perianthium* lilacinum, pollicare, tubo brevi curvato; segmenta superiora oblonga, obtusa, insigniter cucullata; 3 inferiora paulo breviora, limbo parvo atrobrunneo, ungue elongato angusto. *Stamina* limbo paulo breviora.

BRITISH CENTRAL AFRICA. Masuku plateau, alt. 6500-7000 ft., *Whyte*. Described from specimens cultivated in a garden at Zomba.



556. *Hypoxis* (*Euhypoxis*) *oligophylla*, *Baker* [Amaryllidaceæ-Hypoxideæ]; gracillima, uniflora, foliis 2-3 lineari-subulatis.

*Cormus* oblongus, 3-4 lin. diam., tunicis interioribus membranaceis supra collum productis. *Folia* producta 2-3, erecta, lineari-subulata, 2-3 poll. longa, obscure pilosa, uninervata, costa incrassata angulata. *Pedunculus* gracilis, uniflorus, erectus,  $1\frac{1}{2}$ -2 poll. longus, superne pilosus. *Perianthii* segmenta oblongo-lanceolata, 3 lin. longa, facie flava, dorso viridula, leviter pilosa. *Stamina* perianthio triplo breviora, antheris linearibus luteis, filamentis brevissimis. *Ovarium* clavatum, pilosum,  $1\frac{1}{2}$  lin. longum.

MADAGASCAR. Mount Antety, *Forsyth Major*, 669.

Of this very dwarf slender mountain species the nearest ally is the Angolan *H. monanthos*, *Baker*.

557. *Hypoxis* (*Euhypoxis*) *malosana*, *Baker* [Amaryllidaceæ-Hypoxideæ]; ad *H. canaliculatam*, *Baker*, angolensem magis accedit.

*Folia* basalia scariosa, dense pilosa; cætera producta linearia, erecta, rigidula, parce pilosa, semipedalia, 1 lin. lata. *Pedunculi* 3-4, gracillimi, infra apicem glabri, foliis superantes. *Flores* pauci in racemum brevem aggregati; pedicelli erecti, dense pilosi; bractæ lineares, parvæ. *Ovarium* turbinatum, dense pilosum. *Perianthii* segmenta lanceolata, dorso dense pilosa. *Stamina* brevissima. *Capsula* medio circumscissa.

BRITISH CENTRAL AFRICA. Mount Malosa, near Zomba, alt. 4000-6000 ft., *Whyte*.

558. *Hypoxis* (*Euhypoxis*) *nyasica*, *Baker* [Amaryllidaceæ-Hypoxideæ]; ad *H. obtusam*, *Burch.*, magis accedit.

*Folia* basalia scariosa, glabra; cætera producta, multa, linearia, firmula, pilosa, pedalia, 3 lin. lata. *Pedunculi* interdum 6-7, erecti vel patuli, sparse pilosi, foliis breviores. *Flores* pauci, in racemos laxos aggregati; pedicelli breves, ascendentes, pilosi; bractæ minutæ, lineares. *Ovarium* turbinatum, pilosum. *Perianthii* segmenta oblonga, flava, 3-4 lin. longa, dorso dense pilosa. *Stamina* limbo duplo breviora, filamentis brevissimis. *Capsula* medio circumscissa.

BRITISH CENTRAL AFRICA. Mount Zomba and Mount Malosa, alt. 4000-6000 ft., *Whyte*.

559. *Crinum* (*Codonocrinum*) *parvum*, *Baker* [Amaryllideæ-Amarylleæ]; ex affinitate *C. pauciflori*, *Baker*.

*Bulbus* ovoideus, parvus, in collum hand productus. *Folia* 5-7, synanthia, linearia, glabra, flaccida, 6-9 poll. longa, medio 6-7 lin. lata. *Pedunculus* gracilis, uniflorus, foliis æquilongus; spathæ valvæ lanceolatae. *Perianthium* sessile, tubo cylindrico erecto viridulo 3 poll. longo, segmentis lanceolatis dorso rubrovittatis 3 poll. longis 6 lin. latis. *Stamina* limbo paulo breviora, antheris 3-4 lin. longis.

EAST TROPICAL AFRICA. Banks of the Zambesi River. Flowered in the garden of W. E. Gumbleton, Esq., of Queenstown, Ireland, in May 1896.

560. *Anthericum* (*Trachyandra*) *malosanum*, *Baker* [Liliaceæ-Asphodeleæ]; ad *A. Gerrardi*, *Baker*, magis accedit.

*Folia* radicalia multa, anguste linearia, firmula, 6-8 poll. longa, pilis mollibus patentibus parce vestita. *Pedunculus* gracilis, subteres, brevis, simplex vel furcatus, dense vel sparse pilosus. *Racemi* laxissimi, 6-9 poll. longi, pedicellis brevibus solitariis cernuis, apice articulatis; bracteæ minutæ, membranaceæ, acutæ, viridi-carinatae. *Perianthium* 3 lin. longum, segmentis albidis viridi-carinatis. *Stamina* perianthio paulo breviora, antheris oblongis filamentis paulo brevioribus. *Capsula* globosa, muricata, 2 lin. diam.

BRITISH CENTRAL AFRICA. Mount Malosa, near Zomba, alt. 4000-6000 ft., *Whyte*.

561. *Anthericum* (*Dilanthes*) *Whytei*, *Baker* [Liliaceæ-Asphodeleæ]; ab *A. trifloro*, *Ait.*, (*A. Cameroni*, *Baker*) præsertim recedit foliis pubescentibus.

*Folia* linearia, chartacea, pedalia, et ultra, 6-9 lin. lata, venis crebris elevatis, utrinque dense persistenter pubescentibus. *Pedunculus* anceps, aphyllus, simplex, pedalis. *Racemus* simplex, brevis, superne densus, pedicellis brevibus medio articulatis, inferioribus 2-3-nis; bracteæ ovatae, parvæ, imbricatæ, brunneæ. *Perianthium* 3 lin. longum; segmenta oblonga, alba, carinata, carina pallide brunnea. *Stamina* perianthio paulo breviora, antheris linearibus magnis, filamentis brevissimis. *Ovarium* globosum; stylus antheras superans.

BRITISH CENTRAL AFRICA. Mount Zomba, alt. 2500-3500 ft., *Whyte*.

562. *Chlorophytum floribundum*, *Baker* [Liliaceæ-Asphodeleæ]; ad *C. gallabatense*, *Schweinf.*, magis accedit.

*Folia* radicalia sessilia, lanceolata, membranacea, glabra, pedalia et ultra, medio 1-2 poll. lata, venis laxis perspicuis. *Racemi* 5, cylindrici, elongati, ascendentes, paniculam amplam formantes; pedicelli 3-4-ni, breves, pubescentes, medio articulati; bracteæ lanceolatae, inferiores magnæ. *Perianthium* album, oblongum, 3 lin. longum, segmentis lanceolatis obscure carinatis. *Stamina* perianthio paulo breviora, antheris parvis oblongis. *Ovarium* globosum, acute angulatum; stylus elongatus, curvatus.

BRITISH CENTRAL AFRICA. Mount Zomba, alt. 2500-3500 ft., *Whyte*.

563. *Albuca* (*Falconera*) *Adlami*, *Baker* [Liliaceæ-Scilleæ]; ad *A. polyphyllam*, *Baker*, magis accedit.

*Bulbus* globosus, 2 poll. diam., fibris coronatus. *Folia* 30-40, erecta, subteretia, viridia, pedalia, glabra, facie profunde canaliculata, dorso rotundata. *Pedunculus* validus, semipedalis. *Flores* 5-6, corymbosi; pedicelli erecti, 3-6 poll. longi; bracteæ parvæ, lanceolatae. *Perianthium* oblongum, segmentis albis læte viridi-vittatis, exterioribus lineari-oblongis 1 poll. longis, interioribus brevioribus apice incurvatis. *Stamina* 6, segmentis



interioribus paulo breviora, antheris omnibus fertilibus, filamentis applanatis. *Stylus* triqueter, trisulcatus, validus, ovario oblongo duplo longior.

TRANSVAAL. *Adlam*. Flowered at Kew, June, 1897.

564. *Albuca* (*Falconera*) *nyikensis*, *Baker* [Liliaceæ - Scilleæ]; ad *A. caudatam*, Jacq., et *A. fastigiatam*, Dryand., magis accedit.

*Bulbus* globosus, magnus. *Folia* linearia, glabra, deorsum 9 lin. lata, ad apicem sensim attenuata. *Pedunculus* elongatus, validus, teres. *Racemus* laxus, cylindricus, demum pedalis, pedicellis erecto-patentibus, infimis  $1\frac{1}{2}$ –2 poll. longis; bracteæ lanceolatæ, acuminatæ, pedicellis breviores. *Perianthium* oblongum, 1 poll. longum; segmenta lineari-oblonga, alba, dorso carinata, carina læte viridi multinervata. *Stamina* perianthio paulo breviora, antheris omnibus fertilibus, filamentis linearibus. *Ovarium* oblongum; stylus validus, ovario paulo longior. *Capsula* ovoidea, 9 lin. longa. *Semina* multa, turgida, opaca, brunnea.

BRITISH CENTRAL AFRICA. Nyika plateau, alt. 6000–7000 ft., *Whyte*, 246.

565. *Rhaphidophora africana*, *N. E. Brown* [Aroideæ]; *R. Kunsteri*, Hook. fil., similis, differt venis magis ascendentibus et spatha multo minori.

*Caulis* alte scandens, 80–100 ped. longus, parte florifera 6 lin. crassus. *Foliorum* petioli 6–10 lin. longi; laminæ 8–21 poll. longæ,  $2\frac{1}{4}$ – $4\frac{3}{4}$  poll. latæ, elongato-oblongo-lanceolatæ, acuminatæ, valde obliquæ vel subfalcatæ, basi cuneato-acutæ, glabræ, venis numerosis parallelis ascendentibus leviter curvatis. *Pedunculi* 3–5 poll. longi, glabri. *Spatha* circa 4– $4\frac{1}{2}$  poll. longa, elliptico-oblonga, acuminata, dum convoluta rostrata, glabra, alba. *Spadix* sessilis,  $3\frac{1}{2}$ –4 poll. longus. *Ovarium* imperfecte 2-loculare, ovulis plurimis.

UPPER GUINEA. Fernando Po, *Mann*, 103. Sierra Leone, near Sakuru, *Scott Elliot*, 4940, and near Kurusu, *Scott Elliot*, 5524. Ashantee, Assin-yan-Coomassie, *Cummins*, 47.

566. *Rhaphidophora pusilla*, *N. E. Brown* [Aroideæ]; species caule tenuissimo et spathis parvis facile distinguitur.

*Caulis* tenuissimus,  $\frac{1}{2}$ –1 lin. crassus, radicans, glaber. *Foliorum* petioli 4– $4\frac{3}{4}$  poll. longi; laminæ 5– $6\frac{1}{2}$  poll. longæ,  $1\frac{1}{4}$ – $1\frac{3}{4}$  poll. latæ, suboblique lanceolatæ, acuminatæ, basi cuneato-acutæ, utrinque glabræ, venis numerosis parallelis. *Pedunculi*  $1\frac{1}{4}$ –2 poll. longi, graciles, quam petioli duplo breviores. *Spatha* 7–9 lin. longa, circa 3 lin. diam., dum convoluta cylindrica subulato-rostrata. *Spadix* 4– $5\frac{1}{2}$  lin. longus, sessilis. *Ovarium* imperfecte 2-loculare pluriovulatum.

FRENCH CONGO TERRITORY. Gaboon: Sierra del Crystal *Mann*, 1700.

567. *Pennisetum* (*Beckeropsis*) *Kirkii*, *Stapf* [Gramineæ-Paniceæ]; *P. unisetum*, Benth., consimillima, sed gluma ii. magis evoluta 3–5-nervi, et glumis iii. et iv. similibus distincta.

*Culmi* erecti, graciles, ramosi, superne plus minusve triquetri, glabri, leves, multinodi. *Foliorum* vaginae subaretae, glabrae vel ad nodos parce pilosae; ligulae ad pilorum series reductae; laminae lineares vel lanceolato-lineares, longe attenuatae, basi angustae vel subpetiolatae, ad 1 ped. longae, 5 lin. latae, firmulae, subglaucae, scaberulae vel marginibus exceptis leves. *Racemi* longe tenuiterque pedunculati, solitarii vel geminati, e vaginis superioribus orti, 1-2 poll. longi, rhachi scabrida. *Spiculae* subimbricatae, lanceolato-oblongae, acutae, 1-1½ lin. longae, seta basali circiter 1 poll. longa; gluma i. rotundata, hyalina, enervis, ¼ lin. longa, ii. ovata vel oblongo-lanceolata, acuta vel acuminata, tenuiter 3-5-nervis, minute scaberula spiculam aequans vel dimidio brevior; caetera ut in *P. uniseti*.

BRITISH CENTRAL AFRICA. Shire Highlands, Soche Hill, 3000 ft., *Kirk*.

568. *Andropogon* (*Sorghum*) *trichopus*, *Staff* [Gramineae-Andropogoneae] *A. bipennato*, Hack., affinis, sed paniculae ramulis subspiculis ciliatis et arista brevi 4 lin. longa distincta.

*Culmi* 4-5 ped. alti, graciles. *Foliorum* vaginae superiores longissimae, glabrae, leves; ligulae pubescentes; laminae subsetaceo-convolutae, glabrae, leves, summae 4-6 poll. longae. *Panicula* erecta, lineari-oblonga, 6-10 poll. longa; rami primarii ad 4 poll. longi, 6-articulati, secundarii ramulosi, flexuosi, patuli vel demum erecti, filiformes vel capillares; ramuli ultimae ordinis subspiculis ciliati; articuli eleganter ciliati. *Spiculae* solitariae, lanceolatae vel lanceolato-oblongae, 2-2½ lin. longae, pallidae; gluma i. truncata, sub apice hyalino albo-pilosa, tenuiter 8-9-nervis; ii. glabra, apice hyalino-triangularis, minute ciliata; iv. quam ii. paulo brevior, ovato-oblonga, obscure 2-dentata, arista 4 lin. longa; palea nulla. *Antherae* 1¼ lin. longae. *Pedicelli* steriles eleganter ciliati, quam spiculae sessiles ¼ breviores.

UPPER GUINEA. Niger Region, Nupe, in open plains, *Barter*, 1375.

569. *Anthoxanthum madagascariense*, *Staff* [Gramineae-Phalarideae] proxima *A. Ecklonii* (Hierochloae Ecklonii, *Nees*), sed spiculis purpurascentibus minoribus distincta.

*Culmi* erecti vel suberecti, ad 1 ped. alti. *Folia* 3-4 basalia, et 1 vel 2 a basi remota; vaginae glabrae, leves vel minutissime scaberulae, striatae; ligulae truncatae, ½-1 lin. longae; laminae lineares, subcallose acutae, inferiores 1-3 poll. longae 1½-2 lin. latae, rigidulae, secundum margines reverse pilosae, caeterum plerumque glaberrimae, in nervis saepe sparse minuteque scaberulae, prominenter striatae. *Panicula* spiciformis, ad 2 poll. longa, ramulis pedicellisque pilosis. *Spiculae* purpurascentes, 2½-2¾ lin. longae; gluma i. 1-nervis quam ii. 3-nervis paulo brevior; iii. et iv. aequales, pilosulae, 2¼ lin. longae, vacuae, illa supra medium breviter, haec infra medium longius aristata; v. obtusissima vel submarginata, 5-nervis, vix 1 lin. longa; palea sub flore hermaphrodito glumae v. aequilonga vel paululo longior, tenuiter 1-nervis. *Stamina* 2; antherae 1 lin. longae.

MADAGASCAR. Without locality, *Baron*, 2050, 4098.



This species belongs to R. Brown's genus *Ataxia* which has been reduced to *Hierochloe*, but wrongly, as it has much more in common with *Anthoxanthum*. It is very near the South African *A. Ecklonii*, Stapf (*Hierochloe Ecklonii*, Nees), which has, however, larger and pale green spikelets and sometimes a male flower with glume iii.

570. *Ehrharta delicatula*, Stapf [Gramineæ - Phalarideæ]; affinis *E. erectæ*, Lam., sed differt duratione annua, spiculis minoribus, staminibus 3.

*Annua*, ad  $1\frac{1}{2}$  ped. alta. *Culmi* geniculati, graciles, glabri vel minute pubescentes, circiter 3-nodi. *Foliorum* vaginæ arctæ, glabræ vel pilosæ; ligulæ breves, truncatæ; laminæ lineares,  $1-3\frac{1}{2}$  poll. longæ, 1-2 lin. latæ, flaccidæ, minute pilosulæ vel glabrescentes. *Panicula* angusta, subsecunda,  $1-3\frac{1}{2}$  poll. longa, rhachi glabra filiformi, ramis capillaribus patulis simplicibus vel parce ramulosis. *Spiculæ* sæpe nutantes,  $1-1\frac{1}{2}$  lin. longæ; gluma i. lanceolata, acuminata,  $\frac{3}{4}$  lin. longa, 3-nervis, pilosula vel glabra; ii. similis, 1 lin. longa; iii. and iv. anguste oblongæ vel obovato-oblongæ, subacuminatæ vel acutæ, 5-nerves, transverse rugosæ, ebarbatæ; iii. paululo brevior; iv. basi utrinque appendice semiorbiculari ornata; v. elliptico-oblonga, minute truncata vel subacuta, 5-nervis, iv. æquans. *Lodiculæ* glabræ. *Stamina* 3; antheræ  $\frac{1}{6}$  lin. longæ.—*E. panicea* var. *cuspidata*, Nees in *Fl. Afr. Austr.*, p. 225 (var. *mucronata*, p. 226) ex parte.

CAPE COLONY. Little Namaqualand, near Mieren Kasteel, among shrubs, Drège, 508. Tulbagh Division, Roodezand, Drège.

Nees quotes *E. panicea* var. *mucronata* also from the following localities: Elleboog Fontein (Little Namaqualand), Ebenazar (Clanwilliam Div.) and Slangenhuiwel (Tulbagh Div.); but from the description (i.e. p. 225 & p. 226), it appears that at least some of the specimens referred to do not belong here.

571. *Ehrharta Rehmannii*, Stapf [Gramineæ - Phalarideæ]; proxima *E. calycineæ*, Sm., sed magis ramosa, culmis 6-8-nodis, foliis rigidioribus, spicularum glumis iii. et iv. glabris glumas i. et ii. paulo superantibus distincta.

*Perennis*, 1-2 ped. alta. *Culmi* a basi interdum prostrata, admodum ramosa, geniculatim erecti, graciles, leves, 6-8-nodi, internodio longissimo ad 3 poll. longo. *Foliorum* vaginæ glabræ vel reverse villosulæ; ligulæ brevissimæ, ciliatæ; laminæ lineares, breviter acutæ, 1-4 poll. longæ,  $1\frac{1}{2}-3$  lin. latæ, rigidæ, glaucæ, glabræ vel superne scaberulæ vel villosulæ. *Panicula* erecta, angusta, 1-4 poll. longa, subsecunda, sæpissime ad racemum redacta, ramis suberectis vel patulis rarius pendulis subcapillaribus puberulis. *Spiculæ* pallidæ, oblongæ,  $2\frac{1}{2}-3$  lin. longæ; glumæ i. et ii. subæquales, anguste oblongæ, obtusæ, distinctius nervosæ; iii. et iv. glumas præcedentes paulo superantes, glabræ, illa anguste lineari-oblonga acuta, hæc oblonga obtusa mucronata vel minute cuspidata sæpius transverse rugosa basi utrinque appendice semilunari majusculo ornata ebarbata; v., ut in *E. calycina*, glaberrima.

CAPE COLONY. Without locality, *Harvey*, 318, 329, 335. Cape Div., Table Mountain, *Ecklon*, 419 (partly). Riversdale Div., Zoetmelks Riv. *Burchell*, 6712. George Div., Postberg near George, *Burchell*, 5974; Outeniqua Mts., Montagu Pass, *Rehmann*, 74.

Rehmann's specimens have been distributed as *E. ramosa*, var. *Rehmanni*, Hack. ms.

572. *Agrostis fissa*, *Stapp* [Gramineæ-Agrostideæ]; proxima *A. schimperianæ*, Hochst., sed spiculis paulo majoribus et gluma iii. ad  $\frac{1}{4}$ – $\frac{1}{3}$  fissa e fissura aristata et arista longiore distincta.

*Culmi* geniculati, 2–3 ped. alti, 8–9-nodi, fere tota longitudine vaginati, nodis inclusis. *Foliorum* vaginæ laxiusculæ, leves vel scaberulæ; ligulæ 2–3½ lin. longæ, in dorso scaberulæ; laminæ lineares, setaceo-acutæ, 4–9 poll. longæ, 1½–2½ lin. latæ, planæ, flaccidæ, glaucæ, utrinque scabræ. *Panicula* laxiuscula, 6 poll. longa; rami remote fasciculati, admodum inæquales, longiores ad 2 poll. longi, filiformes vel capillares, flexuosi, hispiduli; pedicelli spiculis plerumque breviores. *Spiculæ* pallidæ, 1¼–1½ lin. longæ; rhachilla brevissime producta, glabra; glumæ i. et ii. æquales vel subæquales, lanceolatae, setaceo-acuminatæ, scaberulæ; iii. oblonga,  $\frac{3}{4}$  lin. longa, truncata, ad  $\frac{1}{4}$ – $\frac{1}{3}$  fissa, lobo utroque 2-dentato, glabro, 5-nervi, nervis lateralibus brevissime excurrentibus, callo glabro, arista gracillima recta vel subrecta e fissura orta; palea 1 lin. paulo longior, 2-dentata. *Antheræ* vix  $\frac{1}{2}$  lin. longæ.—*A. vestita*, Engl. *Hochgebirgsfl. trop. Afr.* p. 128 (quoad specimen citatum).

ABYSSINIA. 'Gageh Merki,' 8700 ft., *Schimper* (1863–8 collection), 1093.

The fissure of glume iii. may already be observed in a very young state, and the awn springs right from the base of it. When mature the awn is rather deciduous.

573. *Agrostis Volckensii*, *Stapp* [Gramineæ-Agrostideæ]; e grege *A. munroana*, Aitch. et Hemsl. (*Calamagrostis munroana*, Boiss.), foliis tenuiter setaceo-convolutis rigidulis glaucis, arista pro spiculis minutis validiuscula, rhachi brevissime continuata distincta.

*Culmi* graciles, e cæspitibus glaberrimis densis erecti, 1–1½ ped. alti, ad vel ultra medium vaginati, 1–2-nodi, nodis inclusis. *Foliorum* vaginæ leves; ligulæ ad 1 lin. longæ, hyalinæ, denticulatæ; laminæ tenuiter setaceo-convolutæ, infimæ et innovationum ad 6 poll. longæ, rigidulæ, glaucæ, leves vel superiores scaberulæ. *Panicula* erecta, 3–6 poll. longa, angustissima, ramis remote fasciculatis admodum inæqualibus (longioribus ad 2 poll. longis) capillaribus sparse ramulosis levibus, pedicellis scaberulis. *Spiculæ* virides vel purpurascentes, circiter 1 lin. longæ, rhachillæ processu brevissimo pilosulo; gluma i. et ii. lanceolatae, acuminatæ, interdum mucronulatæ, 1-nerves, carinis scaberulis, ii. quam i. paululo brevior; iii. quam ii. vix brevior, oblonga, truncata, pilosa, basi 5- superne 4-nervis, nervis exterioribus in setulas asperas breves interioribus in dentes productis, callo breviter barbato, arista subbasilari 2 lin. longa ad medium

geniculata infra torta; palea glumam iii. subæquans, lanceolata, 2-dentata. *Antheræ* obtusæ,  $\frac{1}{4}$  lin. longæ.—*Trisetaria quinqueseta*, K. Schum. in *Engl. Pflanzenw. Ost-Afr. C.*, p. 108, non Hochst.

GERMAN EAST AFRICA. Kilimandjaro, Kifinika Volcano, *Volckens*, 1856.

574. *Agrostis griquensis*, *Stapf* [Gramineæ-Agrostideæ]; affinis *A. verticillatæ*, Vill., sed gracilior, spiculis paulo minoribus, gluma iii. aristulata, antheris minimis, caryopsi lineari-oblonga sulcata.

*Annua*. Culmi geniculati, graciles, paucinodi, ut tota planta glabri, ad 1 ped. alti. *Foliorum* vaginæ leves; ligulæ oblongæ, acutæ, ad 1 lin. longæ; laminæ angustissime lineares, acutæ, 1–2 poll. longæ,  $\frac{1}{3}$ – $\frac{1}{2}$  lin. latæ, leves vel supra leviter scaberulæ. *Panicula* spiciformis, sæpe interrupta, densa, perangusta, 1–1 $\frac{1}{2}$  poll. longa; rami breves, a basi ramulosi, rhachi appressi, asperuli. *Spiculæ* brevissime pedicellatæ,  $\frac{1}{2}$  lin. longæ, pallide virides; rhachilla haud continuata; gluma i. et ii. subæquales, oblongæ, obtusæ vel subemarginatæ, interdum mucronulatæ, asperulæ, marginibus ciliolatis; iii. quam i. paulo brevior, truncata, apice ciliolata vel denticulata, tenuissima, obscure 5-nervis, breviter aristulata, arista terminali, callo glabro; palea  $\frac{1}{3}$  brevior, hyalina. *Antheræ*  $\frac{1}{8}$  lin. longæ, obtusæ. *Caryopsis* lineari-oblonga, conspicue sulcata,  $\frac{1}{4}$  lin. long, in gluma iii. paleaque arcte inclusa.

SOUTH AFRICA. Griqualand West, near Griquatown, *Burchell*, 1863.

575. *Agrostis continuata*, *Stapf* [Gramineæ-Agrostideæ]; affinis *A. Elliotii*, Hack., et *A. natalensis*, Stapf, sed glumis i. et ii. tenuiter acuminatis, iii. pilosa, rhachilla continuata distincta.

*Culmi* erecti, 1–2 ped. alti, ut tota planta glabri, paucinodi. *Foliorum* vaginæ arctæ, glabræ; ligulæ 1 lin. longæ, obtusæ; laminæ lineares, acute attenuatæ, ad 6 poll. longæ, 1–1 $\frac{1}{4}$  lin. latæ, plus minusve flaccidæ, scaberulæ vel subtus leves. *Panicula* subspiciformis, interrupta ad 6 poll. longa, rami fasciculati, fasciculis densis erectis oblongis, admodum inæquales, longiores ad 2 $\frac{1}{2}$  poll. longi ad 6–9 lin. lati simplices, cæteri a basi ramulosi, parce asperuli; pedicelli plerumque spiculis breviores. *Spiculæ* virescentes 2 lin. longæ; rhachilla brevissime producta, arista gracillima  $\frac{1}{4}$ –2 lin. longa vel rarius gluma imperfecta terminata; glumæ i. et ii. æquales vel subæquales, lineari-lanceolatæ, tenuiter acuminatæ, scaberulæ; iii. oblonga, 1 lin. sublongior, tenuis, inferne 5- superne 4-nervis, 4-dentata vel 4-mucronata (mucronibus exterioribus plerumque longioribus) secundum nervos pilosula, callo minute pilosulo, arista supra basin orta scabra medio subgeniculata; palea quadrato-oblonga, 2-dentata, hyalina,  $\frac{1}{3}$ – $\frac{1}{2}$  lin. longa. *Antheræ*  $\frac{3}{4}$  lin. longæ.

BRITISH CENTRAL AFRICA. Nyasaland, *Buchanan* (1891 collection), 356.

576. *Agrostis natalensis*, *Stapf* [Gramineæ-Agrostideæ]; *A. Elliotii*, Hack., affinis, sed foliis multo angustioribus, spiculis paulo longioribus, gluma iii. brevior et latiore, palea truncata distincta.



*Perennis*, 2-3 ped. alta. *Culmi* erecti, ut tota planta glabri, 5-6-nodi. *Foliorum* vaginae subarctae, leves; ligulae  $\frac{1}{2}$ - $\frac{3}{4}$  lin. longae; laminae anguste lineares, tenuiter attenuatae, 3-7 poll. longae,  $\frac{1}{2}$ -1 lin. latae, planae, flaccidae, minute scaberulae vel fere leves. *Panicula* erecta, spiciformis, lobata, 4-7 poll. longa; ramuli fasciculati, fasciculis densissimis oblongis, admodum inaequales, ad  $1\frac{1}{2}$  poll. longi, a basi ramulosi vel longiores ad 3-4 lin. simplices, scaberuli; pedicelli brevissimi. *Spiculae* pallide virides, circiter  $2\frac{1}{2}$  lin. longae; rhachilla non producta; glumae i. et ii. subaequales, lineari-oblongae, mucronatae, scaberulae, carina validiuscula; iii. oblonga, truncata, 4-dentata vel 4-mucronata, 1 lin. longa, basi 5-nervis, superne 4-nervis, callo parce pilosulo, arista recta supra basin orta scabra; palea quadrato-oblonga, truncata, hyalina,  $\frac{1}{4}$ - $\frac{1}{3}$  lin. longa. *Antherae* apiculatae,  $\frac{1}{2}$  lin. longae. *Caryopsis* oblonga, a dorso compressa, sulcata  $\frac{7}{8}$  lin. longa.

NATAL. Umpumulo, 2000 ft., *Rev. J. Buchanan*, 159.

This and the preceding species, as well as *A. Elliotii*, are also allied to *A. antarctica*, Hook. fil., and to a few South American species which were described by Nees under *Bromidium*, but they differ from them in the subbasal insertion of the awn.

577. *Avena Newtonii*, *Stapf* [Gramineae-Aveneae]; affinis *A. Neesii*, Hook. fil., glumis i. et ii. fere duplo latioribus 4-7-nervibus, iii. 9-11-nervi distincta.

*Culmi* ut tota planta glabri. *Foliorum* culmorum vaginae subarctae, leves, prominenter nervosae; ligulae truncatae,  $\frac{1}{2}$  lin. longae; laminae lineares, tenuiter attenuatae, 3-5 poll. longae, 1- $1\frac{1}{2}$  lin. latae, planae, superne et secundum margines minute scaberulae. *Panicula* angusta, erecta,  $\frac{1}{2}$  ped. alta; rami subremote geminati, inaequales, longiores ad 3 poll. longi a basi parce ramulosi vel ad 1 poll. simplices, filiformes, scabri. *Spiculae*  $5\frac{1}{2}$ - $6\frac{1}{2}$  lin. longae, 2-8-florae; rhachilla tenuis, articulo primo minuto glabro, caeteris ad 2 lin. longis longe pilosis; gluma i. lanceolata, subacuminata,  $3\frac{1}{2}$  lin. longa, admodum tenuis, 4-5-nervis; ii. similis, 5 lin. longa, 5- vel sub 7-nervis; glumae florentes breviter exsertae, lanceolatae, glabrae, tenuiter granulose, prominenter 9- vel sub 11-nerves, apice bifidae, lobis scariosis subaristulatis, iii.  $5\frac{1}{2}$ - $6\frac{1}{2}$  lin. longa, callo parvo barbato, arista e medio inserta columna 3 lin. seta 6 lin. longa; paleae lineari-lanceolatae  $3\frac{1}{2}$  lin. longae, carinis ciliatis. *Lodiculae* oblongae bifidae,  $\frac{7}{8}$  lin. longae. *Caryopsis* lineari-oblonga, superne puberula, 2 lin. longa.

PORTUGUESE WEST AFRICA. Mossamedes, Serra da Chella, *Newton*, 6.

578. *Avena muriculata*, *Stapf* [Gramineae-Aveneae]; affinis *A. Neesii*, Hook. fil., spiculis minoribus, glumis vacuis tenuibus subhyalinis, glumis fertilibus conspicue scaberulis tenuiter 7-nervibus distincta.

*Perennis*. *Culmi* erecti,  $2\frac{1}{2}$ - $3\frac{1}{2}$  ped. alti, glabri, leves, circiter 3-nodi. *Folia* 4-6 prope basin congesta, 3-4 remotiora; vaginae firmiusculae, arctae, glabrae, leves; ligulae rotundatae, ad  $1\frac{3}{4}$  lin. longae; laminae lineares, acute attenuatae,  $\frac{1}{2}$ -1 ped. longae,  $1\frac{1}{2}$ -2 lin. latae, planae, firmae, plerumque glabrae, leves. *Panicula* angusta,

erecta, 5-7 poll. longa; rami geminati vel 3-4-nati, longiores ad 3 poll. longi, nutantes, simplices ad 1-1½ poll., filiformes, scabridi. *Spiculæ* erectæ, 4-5 lin. longæ, 2-3-floræ; rhachillæ articuli ad 1½ lin. longi, pilosi; glumæ vacuæ tenues, subhyalinae, lanceolatae; i. 3-nervis, 3-3½ lin. longa; ii. 3-5-nervis, 4-4½ lin. longa; glumæ florentes breviter exsertæ, lanceolatae (iii. 4-4½ lin. longa), glabræ, scaberulæ, tenuiter 7-nerves, sub apice scariosæ purpurascens, bifidæ, lobis aristulatis, callo parvo barbato, arista medio orta 7-8 lin. longa; paleæ lineares, 3 lin. longæ, carinis superne longiuscule ciliatis. *Antheræ* 1½ lin. longæ. *Ovarium* supra medium hispidulum.—*A. Neesii*, Schweinf., *Beitr. Fl. Aethiop.* p. 298, non Hook. fil. *Trisetum Neesii*, Hochst. ex *Steud. Syn. Gram.* p. 227. *Danthonia elongata*, Hochst. in *Flora*, 1841, I. *Intell. Bl.* p. 20; A. Rich., *Tent. Fl. Abyss.* II. p. 419.

ABYSSINIA. Without locality, *Schimper*, III. 1993; Tigre, Mt. Sholoda, *Schimper*, I. 402; Amba Harres, 7500 ft., *Schimper* (1862 collection), 1002; Shoa, Ankober, *Roth*. Eritrea: Mt. Bizen, 6000 ft. *Schweinfurth* (1892 collection), 2018.

579. *Avena Rothii*, *Stapf* [Gramineæ-Aveneæ]; affinis *A. lachnanthæ*, Hook. fil., sed paniculis laxioribus gracilioribus, spiculis minoribus magis dispersis, glumis fertilibus tenuius nervosis distincta.

*Culmi* e basi debili gracili longe ascendentes, 3-4 ped. longi, glabri, leves, multinodi. *Foliorum* vaginæ laxæ, glabræ vel infimæ primo puberulæ, leves; ligulæ truncatæ, ad 2 lin. longæ; laminæ lineares, tenuiter attenuatæ, 5-7 poll. longæ, 2 lin. latæ, flaccidæ, glabræ, rarissime pubescentes, supra et in marginibus minute scaberulæ. *Panicula* angusta, laxa, 4-9 poll. longa, erecta vel subnutans; rami remote semiverticillati, admodum inæquales, parce ramulosi vel simplices, tenuiter filiformes, flexuosi, scaberuli, longiores ad 2 lin. longi. *Spiculæ* dispersæ, 3½-5 lin. longæ, laxæ 3-4-floræ; rhachillæ articulæ superiores ad 1¼ lin. longæ, longe pilosæ; glumæ vacuæ pertenuis, i. lanceolata, acuta, 1-nervis, 1½-2 lin. longa; ii. obverse lanceolata, acuta vel breviter acuminata, 2½-3 lin. longa, 3-nervis; glumæ florentes longe exsertæ, oblongo-lanceolatae, ad 3½ lin. longæ, glabræ, pallide virides, rarius sub apice purpurascens, leves, tenuiter nervosæ, apice scariosæ, bidentatæ, dentibus acutis vel subaristulatis, callo minuto barbato, arista supra medium orta tenui columna laxè torta 1¼ lin. seta 5-7 lin. longa; paleæ oblongo-lineares, 2½ lin. longæ, carinis scaberulis. *Antheræ* ¾ lin. longæ. *Ovarium* apice hispidum, deinde ad medium puberulum.—*A. lachnantha*, Schweinf. *Beitr. Fl. Aethiop.* p. 298, non Hook. fil. *Trisetum lachnanthum*, Hochst. ex A. Rich. *Tent. Fl. Abyss.* II. p. 416.

ABYSSINIA. Simen, Mt. Aber near 'Dschenausa,' *Schimper*, II. 859; Shoa, *Roth*.

580. *Avena longa*, *Stapf* [Gramineæ-Aveneæ]; affinis *A. dregeana*, Stapf (*Trisetum dregeano*, *Steud.*), sed panicula multo longiore flaccida laxè contracta et foliis longis flaccidis distincta.

*Cæspitosa*, perennis. *Culmi* erecti, 2-3 ped. alti, glabri, circiter 3-nodi, ad fere basin paniculae vaginati. *Folia* 3-6 prope

basin congesta, 3 remotiora; vaginae laxiusculae, glabrae, leves; ligulae truncatae, ad  $1\frac{1}{2}$  lin. longae; laminae lineares, longe tenuiterque attenuatae, 6–10 poll. longae,  $1\frac{1}{2}$ –3 lin. latae (summa 1–2 poll. longa), planae vel plus minusve involutae, flaccidae, glabrae, leves. *Panicula* laxae contracta, 9–10 poll. longa, nutans vel flexuosa; rami semiverticillati, longiores ad  $2\frac{1}{2}$  poll. longi, filiformes, flexuosi, fere a basi ramulosi vel simplices. *Spicula* angustae, 6–9 lin. longae, 4–5-florae; rhachilla gracillima, articulis ad  $1\frac{1}{2}$  lin. longis, longe pilosis; glumae vacuae acuminato-lanceolatae, i.  $3\frac{1}{2}$ –4 lin., ii.  $4\frac{1}{2}$ –5 lin. longa; glumae florentes longe exsertae, lanceolatae (iii. 5 lin. longa), glabrae, firminusculae, leves, pallide virides vel sub apice scarioso scaberulo bifido purpurascens, lobis aristulatis, callo subulato piloso, arista supra medium orta tenui 10–12 lin. longa; paleae  $3\frac{1}{2}$  lin. longae, carinis ciliolatis. *Antherae*  $1\frac{1}{4}$ – $1\frac{1}{2}$  lin. longae. *Ovarium* praeter basin glabrum puberulum et in apice hispidulum.—*Trisetum antarcticum*, Nees in *Linnaea* xx. p. 254, nec *Linnaea* vii. p. 301.

CAPE COLONY. Cape of Good Hope, *R. Brown*; Cape Flats, Doorn Hogte, *Ecklon and Zeyher* 1807, 1807 B.

581. *Avena turgidula*, *Stapf* [Gramineae-Aveneae]; valde affinis *A. antarcticae*, Thunb., sed spiculis ob glumas latiores magis approximatas plus minusve imbricatas turgidulis.

*Perennis*. Culmi erecti, 1– $2\frac{1}{2}$  ped. alti, glabri, 2–3-nodi. *Folia* pauca prope basin congesta, circiter 3 remotiora; vaginae subarctae, glabrae vel minutissime puberulae; ligulae truncatae, ad  $\frac{3}{4}$  lin. longae; laminae lineares, acute attenuatae, ad 6 poll. longae,  $1\frac{1}{2}$  lin. latae, planae vel involutae, flaccidae vel rigidulae, subglaucae, plerumque glabrae, superne scaberulae. *Panicula* contracta, erecta vel subnutans,  $\frac{1}{2}$ –1 ped. alta; rami semiverticillati, admodum inaequales, longiores ad  $1\frac{1}{2}$  poll. longi, parce ramulosi vel simplices, filiformes, scabri. *Spiculae* 4– $5\frac{1}{2}$  lin. longae, virides, turgidulae, 3–4-florae; rhachilla gracilis articulis parce vel crebrius pilosis ad 1 lin. longis; glumae vacuae lanceolatae, acuminatae, i.  $2\frac{1}{2}$ –3 lin., ii. 4– $4\frac{1}{2}$  lin. longa; glumae florentes exsertae, oblongo-lanceolatae, (iii.  $3\frac{1}{2}$ –4 lin. longa), glabrae, pallide virides, obscure granulatae, apice scariosae, bidentatae, dentibus aristulatis, callo brevissimo barbato, arista e medio orta tenui 7–9 lin. longa; paleae lineares, 3 lin. longae, carinis ciliatis. *Antherae*  $\frac{1}{2}$ –1 lin. *Ovarium* supra medium pubescens, apice hispidulum. *Caryopsis*  $1\frac{1}{4}$  lin. longa.—*Trisetum imberbe*, Nees, *Fl. Afr. Austr.* p. 347; *T. antarcticum*, Nees, l.c. p. 346 (partim).

SOUTH AFRICA. Cape Colony: without locality *Zeyher*, 463. Queenstown Div.: Shilo, 3500 ft., *Drège*; *Baur* 776. Alival North Div.: Leuuwenspruit, 4500–5000 ft., *Drège*. Transkei Div.: Gekau, below 1000 ft., *Drège*. Tembuland: Bazeia, 2000 ft., *Baur*, 364. Natal: Umzinga, foot of Bigarsberg, *Rev. J. Buchanan*, 100; Greytown, *Rev. J. Buchanan*, 172; Reit Vlei, 4000–5000 ft., *Rev. J. Buchanan*, 156. Transvaal: Pretoria, Wonderboomport, *Rehmann* 4493.

582. *Avena caffra*, *Stapf* [Gramineae-Aveneae]; affinis *A. antarcticae*, Thunb., sed panicula flexuosa, rhachilla longe pilosa, glumis florentibus tenuibus levibus distincta.



*Perennis*. *Culmi* 2 ped. alti, erecti, glabri, 3-4-nodi, ad fere basin paniculae vaginati. *Folia* 4-6 prope basin congesta, 3 remotiora; vaginae glabrae, leves; ligulae oblongae, ad  $\frac{3}{4}$  lin. longae; laminae angustissimae, sub-staceo-convolutae, acutae, inferiores 5-7 poll. longae (eae innovationum subpedales), glabrae, marginibus scabris. *Panicula* contracta, circiter 6 poll. longa, subnutans, flaccidula; rami semiverticillati, admodum inaequales, parce ramulosi vel simplices, tenuiter filiformes, longiores ad 2 poll. longi, flexuosi, scaberuli vel hispiduli. *Spiculae* 4-4 $\frac{1}{2}$  lin. longae, laxae 3-4-florae; rhachilla gracillima, articulis ad 1 lin. longis longe pilosis; glumae vacuae pertenuae, lanceolatae, acuminatae, i. 2-2 $\frac{1}{2}$ , ii. 2 $\frac{1}{2}$ -3 $\frac{1}{2}$  lin. longae; glumae florentes exsertae, lineari-lanceolatae (iii. 3-4 lin. longae), glabrae, pallidae, tenues, leves, tenuissime nervosae, apice scariosae, subbifidae, 2-aristulatae, callo parvo barbato, arista supra medium orta tenui 7 lin. longa; paleae lineares, 3 lin. longae, carinis minute ciliolatis. *Antherae* ad 1 $\frac{1}{2}$  lin. longae. *Ovarium* apice hispidulum.—*Trisetum longifolium*, Nees, *Fl. Afr. Aust.* p. 348 (partim).

CAPE COLONY. Alival North Div.: Wittebergen, on rocks, 7500 ft., *Drège*.

583. *Tristachya tuberculata*, *Stapf* [Gramineae-Aveneae]; proxima *T. barbata*, Nees, distincta foliis culmorum quam vaginis multo angustioribus, spiculis minoribus, glumis i. et ii. glanduloso-setaceis, gluma iii. 3-nervi, iv. minute barbulata.

*Culmi* graciles, 3-4 ped. alti, 3-nodi. *Folia* culmorum tantum nota, vaginis aretis glabris levibus quam internodiis multo brevioribus, laminis angustis  $\frac{1}{2}$ -1 lin. longis quam vaginis multo angustioribus. *Spicularum* umbellae numerosae in paniculas erectas subcontractas dispositae, ramis filiformibus capillaribusve scabridis interdum tuberculatis, longioribus ad 3 poll. longis, pedunculis apice albo-setosis, pedicellis  $\frac{1}{2}$  lin. longis; gluma i. ovato-lanceolata, subacuta, 2 lin. longa, utrinque secundum nervos laterales serie glandularum setigerarum notata; ii. oblongo-lanceolata, subacuta, 3-4 lin. longa, ut i. biseriatim glanduloso-setosa; iii. oblongo-lanceolata, acuta, 3-4 lin. longa, 3 nervis, minute pubescens, paleam obtusam 1 $\frac{1}{2}$  lin. longam gerens; iv. lineari-oblonga, a callo ad aristae insertionem 1 $\frac{3}{4}$  lin. longa, bifida lobis in setas 3-4 lin. longas productis, albida, ad loborum basin barbula submarginali sericea ornata, caeterum pubescens, callo sericeo-barbato pungente, aristae columna atra 4-5 lin. seta pallida 8-10 lin. longa; palea lineari-oblonga obtusa 1 $\frac{1}{2}$  lin. longa. *Stamina* in utroque flore 3, antheris  $\frac{3}{4}$ -1 lin. longis. *Ovarium* glabrum. *Caryopsis* obovoideo-oblonga, 1 lin. longa, sulcata, embryone magno.

WEST TROPICAL AFRICA. Senegambia, *Heudelot*, 141; Sierra Leone, Sasseni by the Scarcies River, on dry rocks, *Scott Elliot*, 4536.

584. *Tristachya glabra*, *Stapf* [Gramineae-Aveneae]; inter species adhuc descriptas *T. mexicana*, Kunth, simillima, sed glumae iv. lobis in setas longe productis atque ovario summo stylisque villosis distincta.

*Culmi*  $1\frac{1}{2}$ –3 ped. alti, 1-nodi. *Folia* pleraque ad culmorum basin congesta, vaginis firmis imis inferne villosis cæteris sparse hirtis vel glabris, laminis 4–6 poll. longis,  $1-1\frac{1}{2}$  lin. latis rigidis sparse hirtis vel glabris. *Spicularum* capitula 3–9, in racemos erectos disposita,  $1-1\frac{1}{2}$  poll. longa, pedunculis infimis 2–3-natis ad  $1\frac{1}{2}$  poll. longis; gluma i. lanceolata, acuta, 7–10 lin. longa, glaberrima; ii. longe subulato-acuminata, 12–15 lin., glaberrima; iii. glumæ ii. similis, sed 10–12 lin. longa, 5–7-nervis. paleam bidentatam 9–10 lin. longam gerens; iv. lineari-lanceolata, involuta, a callo ad aristæ insertionem  $3\frac{1}{2}$  lin. longa, albida, pubescens, 5-nervis, bifida, lobis in setas ad 10 lin. longas productis, callo pungente villoso  $1\frac{1}{4}$  lin. longo, arista scabrida  $2\frac{1}{2}$ –3 poll. longa; palea apice truncata et cochleariformis. *Stamina* in utroque flore 3, antheris  $2\frac{1}{2}$ –3 lin. longis. *Ovarium* apice villosum; styli villosi.

CENTRAL AND SOUTH AFRICA. Shire Highlands: Blantyre, L. Scott. Transvaal: Makapans Range, Strydpoort, Rehmann, 5383; Johannesburg, Barber; Potchefstroom, Nelson, 31.

585. *Tristachya biseriata*, Stapf [Gramineæ-Aveneæ]; *T. glabræ*, Stapf, (vide supra) affinis, foliis angustissimis subsetaceis et gluma i. biseriatim glandulosa setosa ii. æquilonga distincta.

*Culmi* graciles,  $1-1\frac{1}{2}$  ped. alti, 1-nodi. *Folia* pleraque ad culmorum basin congesta, vaginis arctis firmis infimis inferne dense tomentosis, laminis angustissime linearibus sæpissime convolutis subsetaceis ad 9 poll. longis glaucis glabris. *Spicularum* capitula 6–7, in racemos erectos contractos disposita, 10–11 lin. longa, pedunculis infimis geminatis vel solitariis ad  $1\frac{1}{2}$  poll. longis; gluma i. lanceolata, acuminata, circiter 10 lin. longa, utrinque secundum nervos laterales serie glandularum nigrarum setigerarum ornata; ii. ei æquilonga, pubescens, eglandulosa; iii. præcedenti similis,  $8-8\frac{1}{2}$  lin. longa, paleam obtusam 7 lin. longam gerens; iv. lanceolato-linearis, a callo ad aristæ insertionem  $3\frac{1}{2}$  lin. longa, albida, pubescens, 7-nervis, bifida, lobis in aristas 4–5 lin. longas productis, callo pungente villoso  $\frac{1}{2}$  lin. longo, arista scabrida  $1\frac{1}{4}-1\frac{1}{2}$  poll. longa; palea obtusa apice interdum subcochleariformis. *Stamina* in utroque flore 3; antheræ haud visæ. *Ovarium* summum et styli villosi.

SOUTH AFRICA. Basutoland: Leribe, Rev. J. Buchanan, 220.

586. *Trichopteryx gigantea*, Stapf [Gramineæ-Aveneæ]; ab omnibus speciebus huius generis differt magnitudine omnium partium, et a plerisque præterea staminibus 3, haud 2.

*Culmi* robusti, 5–12 ped. alti, erecti, tactu asperi vel leves. *Folia* pleraque basalia vel subbasalia, vaginis firmis præter infimas basi tomentosas glabris levibus, ligulis ad pilorum seriem reductis, laminis linearibus vel lineari-lanceolatis setaceo-acuminatis,  $\frac{1}{2}$ –1 ped. longis, 6–8 lin. latis glabris glaucis supra asperis. *Panicula* stricta, contracta,  $\frac{1}{2}$ –1 ped. longa, rhachi aspera glauca vel albida ad nodos imos villosula, ramis strictis scabris geminatis vel semiverticillatis. *Spicula* flavido-brunnæ, erectæ, subcoriaceæ, glabræ,  $1\frac{1}{4}-1\frac{1}{2}$  poll. longæ; gluma i. lanceolata, acuta, 3- rarius 5–7-nervis,  $7\frac{1}{2}$  lin. longa; ii. lanceolata, longe subulato-acuminata,  $1\frac{1}{4}-1\frac{1}{2}$  poll. longa, 3-nervis; iii. lineari-oblonga, acuta, 10–11 lin.

longa, 5-nervis, interdum nervo uno alterove brevi addito, paleam obtusam 4-5 lin. longam gerens; iv. lineari-oblonga, teres, 6 lin. longa, a callo ad aristæ insertionem albida demum nigricans, nitida, pubescens, breviter acuteque biloba, callo longo pungente villosa-barbato, aristæ columna ad  $3\frac{1}{2}$  poll. longa, seta brevi; palea linearis, subbifida,  $6\frac{1}{2}$  lin. longa, carinis crassis approximatis. *Stamina* 3 in utroque flore; antheræ 4 lin. longæ. *Ovarium* glabrum. *Caryopsis* linearis,  $4\frac{1}{2}$  lin. longa, teres, sulcata; embryo  $1\frac{1}{2}$  lin. longus.

TROPICAL AFRICA. Sudan: Bongo land, Doluthe by the Roah, *Schweinfurth*, 2260. Upper Zambesi region: southwest of Victoria Falls, *Baines*; Deykah River, south of Victoria Falls, *Holub*.

I have little doubt that this is De Notaris' *Loudetia superba* from Upper Nubia, which I know only from the description in Ann. Sc. Nat. Ser. III., XIX. p. 369, a description which is a mixture of accurate observation and singular misconception. De Notaris describes the spikelets as 3-flowered, *viz.* with a "neuter" flower at the base of the pale of the male flower and appressed to it, and consisting of a very short fleshy earshaped "palea." He mistook evidently a lodicule for an additional "neuter" flower. At the same time he says there are no "paleolæ," *i.e.* lodiculæ. The statement that the pale of the male flower is 6-nerved, is apparently also due to erroneous observation, the wings of the keels and the side parts often overlapping in such a way as to produce the impression of several lateral nerves. Otherwise, De Notaris' description answers almost exactly that given here of *T. gigantea*.

587. *Trichopteryx camerunensis*, *Staff*, [Gramineæ-Aveneæ]; *T. eleganti*, A. Rich., affinis, sed foliis brevibus, nodis fere semper glaberrimis, panícula minus composita, spiculis paulo majoribus glaberrimis distincta.

*Culmi* graciles, erecti vel basi geniculati,  $1-2\frac{1}{2}$  ped. alti, glabri, 2-3-nodi. *Folia* 3-4 basalia vel subbasalia, 1-3 remota, vaginis arctis firmis hirsutis vel glabrescentibus ad nodos fere semper glaberrimis imis persistentibus haud in fibras solutis, laminis linearibus acutis 2-4 poll. longis  $2-2\frac{1}{2}$  lin. latis viridibus hirsutis vel glabrescentibus. *Panícula* erecta vel subnutans, 2-6 poll. longa, contracta vel subaperta, ramis inferioribus 2-3-natis flexuosis filiformibus scaberulis 3-2-spiculatis vel simplicibus. *Spiculæ* brunneæ, nitidæ, glaberrimæ,  $5\frac{1}{2}-6\frac{1}{2}$  lin. longæ; gluma i. ovata, obtusa, 2 lin. longa; ii. lanceolata, obtusa,  $5\frac{1}{2}-6\frac{1}{2}$  lin. longa; iii. lanceolata, acuminata, ii. subæqualis, 3-nervis; iv. lineari-oblonga, pubescens, 3 lin. longa, breviter bifida, callo brevi tomentoso barbato basi exciso, arista subgracili  $1\frac{1}{2}-2$  poll. longa ad  $\frac{1}{3}$  inferiorem geniculata. *Stamina* 2. *Ovarium* glabrum. — *Loudetia elegans*, Hook. fil. in *Journ. Linn. Soc.* VII. p. 229, non Hochst.

Upper GUINEA. Cameroon Mountains, *Mann*, 1346, 2080.

I found the nodes always perfectly glabrous, with a single exception, in which near the base of a culm there were a few stiff hairs present.



588. *Trichopteryx nigrítica*, Stapf [Gramineæ-Aveneæ]: valde affinis *T. simplicis*, Benth., differt culmis strictissimis gracilioribus, foliis perlongis angustissimis sæpius planis superne capillaribus, paniculis pedalibus vel ultrapedalibus flavidis uberibus.

*Culmi* e cæspitibus densis strictissimi, graciles,  $2\frac{1}{2}$ –3 ped. alti, glabri vel hirsuti, 2–3-nodi. *Folia* circiter 2 prope basin, 2–3 remota, vaginis arctis glabris vel hirsutis ad nodos barbatis vel glabris infimis basi tomentosis demum in fibras solutis, ligulis ad seriem pilorum reductis, laminis angustissime linearibus 1– $1\frac{1}{2}$  ped. longis ad 1 lin. latis apicem versus longe capillaribus glabris hirsutisve rigidis. *Panicula* contracta, densa vel laxiuscula 1– $1\frac{1}{4}$  ped. longa, flavida, ramis sæpe permultis semiverticillatis capillaribus longioribus ad 6 lin. metientibus sæpeque ad medium simplicibus. *Spiculæ*  $4\frac{1}{2}$ –6 lin. longæ, glabræ, structura *T. simplicis* nisi gluma ii. sæpe iii. æquante vel subsuperante.

UPPER GUINEA. Niger region: Nupe, Jeba, Barter.

589. *Trichopteryx acuminata*, Stapf [Gramineæ-Aveneæ]; habitu *T. nigrítica*, Stapf, (vide supra) similis, glumis longe setaceo-acuminatis, staminibus 3 distincta.

*Culmi* graciles, 4 ped. alti, glabri, leves. *Folia* superiora tantum nota, vaginis glaberrimis arctis, ligulis ad seriem pilorum minorum redacta, laminis convolutis setaceis capillariter attenuatis, 4–6 poll. longis, glabris vel supra minutissime puberulis. *Panicula* erecta, angusta, laxiuscula, circiter 9 poll. longa, rhachi glabra, ramis capillaribus suberectis sublevibus sæpius fere a basi spiculigeris, spiculis infimis imperfectis. *Spiculæ* flavidæ, 5 lin. longæ; gluma i. lanceolata, setaceo-acuminata,  $2\frac{1}{2}$ –3 lin. longa, tenuis; ii. similis, sed angustior, longius acuminata, 5 lin. longa; iii. ut ii. nisi nervis lateralibus submarginalibus, paleam apice longiuscule hyalinam 3 lin. longam gerens; iv. lineari-oblonga,  $1\frac{1}{2}$ –2 lin. longa, superne minute puberula, breviter bifida, callo barbato parvo, arista gracili scabrida 1– $1\frac{1}{2}$  poll. longa ad vel infra medium geniculata. *Stamina* in utroque flore 3; antheræ  $\frac{3}{4}$ –1 lin. *Ovarium* glabrum.

UPPER GUINEA. Niger region: Nupe, Barter.

590. *Trichopteryx hordeiformis*, Stapf [Gramineæ-Aveneæ]; inter generis species panicula densa aristis longissimis crinita distinctissima, annua.

*Annua*, gregaria. *Culmi* stricti, 3 ped. alti, glabri, 3-nodi. *Foliorum* vaginæ erectæ, superne hirsutæ, secundum margines ciliatæ, ad nodos barbatae; ligulæ ad pilorum seriem reductæ; laminæ lineares, apice sectaceæ, 6–9 poll. longæ, 2–3 lin. latæ, planæ vel plus minusve revolutæ, hirsutæ, superne purpur-ascens. *Panicula* contracta, densissima, 1 ped. longa, rhachi compressa ad angulos scabra, ramis filiformibus scabris semiverticillatis paucispiculatis appressis brevioribus. *Spiculæ* flavidæ,  $6\frac{1}{2}$ – $7\frac{1}{2}$  lin. longæ, glanduloso-setosæ; gluma i. oblonga, obtusa, 2–3 lin. longa; ii. lanceolata, longe rostrato-acuminata, truncata,  $6\frac{1}{2}$ – $7\frac{1}{2}$  lin. longa; iii. lanceolato-oblonga, subacuta,  $3\frac{1}{2}$ –4 lin. longa, paleam acutam  $1\frac{1}{2}$ –2 lin. longam gerens; iv. oblongo-linearis,

1½–2 lin. longa, pubescens, breviter bifida, callo villosa barbato gracili acuto, arista hispidula columna 1 poll. seta 3–4 poll. longa; palea linearis, subobtusata 1½ lin. longa. *Stamina* in utroque flore 2; antherae 1½ lin.

UPPER GUINEA. Niger region: Nupe and Borgu, *Barter*, 954.

Barter states that in Borgu the inner plains covered with this gregarious species resemble barley crops.

591. *Trichopteryx annua*, *Stapf* [Gramineae-Aveneae]; proxima *T. hordeiformi*, *Stapf*, (vide supra), sed foliis brevibus et panicula laxiuscula minore multo pauperiore distincta.

*Culmi* solitarii vel 2–3 fasciculati, stricti, 2 ped. alti et ultra, leves, 3-nodi. *Foliorum* vaginæ arctæ, glabræ vel tuberculis setigeris parce aspersæ; ligulæ ad seriem pilorum reductæ; laminæ lineares, apice subetaceo-attenuatæ, 2½–4 poll. longæ, 1–2 lin. latæ, planæ vel marginibus revolutæ, sæpius horizontaliter patentes, subrigidæ, glaucæ, tuberculis setigeris imprimis secundum marginem instructæ. *Panicula* stricta, angusta, ad 5 poll. longa, laxiuscula, rhachi inferne tereti glabra, ramis semiverticellatis geminatisve filiformibus simplicibus vel 2–3-spiculatis, brevibus. *Spiculæ* flavidæ, ad 7½ lin. longæ, glanduloso-setosæ vel subglabræ, rarius glaberrimæ; gluma i. ovato-oblonga, obtusa, 2½–3 lin. longa; ii. lanceolata, rostrato-acuminata, obtusa vel truncata, ad 7½ lin. longa; iii. quam secunda multo brevior, truncatula.

SUDAN. Jur: Ghattas' chief seriba, *Schweinfurth*, 2007.

The spikelets are too young for complete description; but the plant is so well marked, that it is easily recognisable from the characters given above. The awns are 1–1¼ in. long in the most advanced spikelets.

592. *Trichopteryx flavida*, *Stapf* [Gramineae-Aveneae]; affinis *T. simplici*, Benth., sed vaginis infimis latiusculis albidis longe villosis haud in fibras solutis, spiculis paulo minoribus pro longitudine latioribus, gluma i. longiore acutissima, iv. 9-nervi distincta.

*Cæspitosa*. *Culmi* erecti, ad 1½ ped. alti, glabri vel superne pilosi, 3-nodi. *Foliorum* vaginæ arctæ, infimæ basi latiusculæ atque longe albido-villosæ, subpersistentes, haud in fibras solutæ, superiores glabræ. *Panicula* subflexuosa, angusta, 3–6 poll. longa, rhachi interdum pilosa, ramis paucispiculatis filiformibus scabridis, 3–2-natis. *Spiculæ* flavidæ, 4–5 lin. longæ, glabræ; gluma i. ovata, peracuta, 2½–3 lin. longa; ii. lanceolata, truncata, 4–5 lin. longa; iii. lanceolata, acuta, ii. subæqualis; iv. lineari-oblonga, 2 lin. longa, a callo ad aristæ insertionem pubescens, 9-nervis, bifida, callo parvo pungenti-viloso barbato, arista gracili infra medium geniculata 1 poll. longa. *Stamina* in utroque flore 2; antheræ 1 lin. longæ.

SOUTH AFRICA. Transvaal: Pretoria, *Rehmann*, 4730; Magalies Mountains, *Derde Poort*, *Nelson*, 75.

593. *Trichopteryx ramosa*, *Stapf* [Gramineae-Aveneae]; inter omnes species generis habitu suffrutescente ramoso insignis.



*Suffrutescens*, ramosa, glaberrima, ad  $1\frac{1}{2}$  ped. alta, ramis culmisque gracilibus. *Foliorum* vaginæ infimæ latiusculæ, apertæ, ut ceteræ tenuiter striatæ; ligulæ ad seriem pilorum brevissimorum reductæ; laminæ angustæ, lineares, sectaceo-attenuatæ, 3-4 poll. longæ,  $1-1\frac{1}{2}$  lin. latæ. *Panicula* angustissima, 2-4 poll. longa, erecta vel subflexuosa, rhachi ramisque paucispiculatis ei appressis levibus. *Spiculæ* pallidæ,  $3-3\frac{1}{2}$  lin. longæ; glumæ tenues; i. lanceolato-oblonga, acuta,  $2-2\frac{1}{2}$  lin. longa; ii. lanceolata, acuta,  $3-3\frac{1}{2}$  lin. longa; iii. priori similis, 7-nervis, nervis intimis abbreviatis, paleam lanceolato-oblongam  $2\frac{1}{2}$  lin. longa m gerens; iv. lineari-oblonga,  $2-2\frac{1}{2}$  lin. longa, glabra, demum purpureo-nigricans, bifida, 7-nervis, callo obtuso parvo barbato, arista tenui 4 lin. longa infra medium torta; palea lineari-lanceolata,  $2\frac{1}{2}$  lin. longa. *Stamina* in utroque flore 2. *Ovarium* glabrum. *Caryopsis* obovoideo-oblonga, 1 lin. longa, sulcata, embryo magno  $\frac{3}{4}$  lin. longo.

SOUTH AFRICA. Kalahari Region: Griqualand, Klip Fontein, Burchell, 2164.

594. *Alsophila Batesii*, Baker [Filices-Cyatheaceæ]; ex affinitate *A. obtusilobæ*, Hook.

*Caudex* 2-3 pedalis. *Stipites* elongati, graciles, nudi, inermes, sesquipedales, paleis basalibus rigidis castaneis lanceolatis acuminatis. *Frondes* oblongo-deltoidæ, bipinnatæ, membranaceæ, utrinque virides, glabræ, 3-4 pedes longæ, 15-18 poll. latæ, rhachi nuda inermi, pinnis lanceolatis sessilibus ad basin pinnatis, inferioribus paucis, centralibus brevioribus majoribus 8-9 poll. longis 18-20 lin. latis, segmentis secundariis linearibus obtusis obscure crenulatis  $2\frac{1}{2}$  lin. latis, venulis perspicuis 14-15-jugis profunde furcatis. *Sori* parvi, intramediales, ad furcam venarum impositi.

UPPER GUINEA. Cameroon Mountains: Forest at Efulen, Bates, 307.

Besides *A. Batesii* only three species of *Alsophila* are known from Tropical Africa.

595. *Polypodium (Phegopteris) efulense*, Baker [Filices-Polypodiaceæ]; ex affinitate *P. Vogelii*, Hook., et *P. nigritani*, Baker.

*Stipites* longissimi, graciles, fragiles, supra basin straminei, nudi, 2-3-pedales, paleis subbasalibus lanceolatis firmulis brunneis concoloribus. *Frondes* deltoideæ, decompositæ, membranaceæ, utrinque virides, facie præter costas glabræ, dorso obscure pubescentes, tripedales, pinnis infimis distincte petiolatis quam reliquis multo majoribus inæquilateralibus latere inferiore valde productis, segmentis ultimis oblongis obtusis crenatis basi in alam costularem confluentibus  $2-2\frac{1}{2}$  lin. lata, venulis laxis obscuris erecto-patentibus ultimis furcatis. *Sori* parvi, inter costam et marginem uniseriales, mediales.

UPPER GUINEA. Cameroon Mountains: Forest Hill, Efulen, Bates, 217.

596. *Polypodium (Grammitis) microphyllum*, Baker [Filices-Polypodiaceæ]; dense cæspitosum, ad *P. Gilpinæ*, Baker, arcte accedit.



*Fronde*s subsessiles, lineares, obtusæ, crenatæ, e medio ad basin sensim angustatæ, 12–15 lin. longæ,  $\frac{1}{2}$ –1 lin. latæ, rigide coriaceæ, paleis subulatis brunneis patulis tenuiter vestitæ, costa tenui nigrescente, venis simplicibus erecto-patentibus, ad marginem haud productis. *Sori* alterni, globosi, uniseriati, superficiales, prope basin laminæ haud producti.

MADAGASCAR. Forest of Ambohimombo, province of Tanala, alt. 1450–1560 ft., *Forsyth Major*, 477.

597. *Polypodium* (*Grammitis*) *tanalense*, *Baker* [Filices-Polypodiaceæ]; a *P. marginello*, Sw., frondibus haud nigro-marginatis recedit.

*Rhizoma* breviter repens. *Stipites* erecti, 9–12 lin. longi, pilis paucis patulis brunneis vestiti. *Fronde*s simplices, lineares, integræ, 4–5 poll. longæ, 3–4 lin. latæ, rigide coriaceæ, utrinque glabræ, margine pilis paucis brunneis præditæ; venæ simplices, laxæ, erecto-patentes, parallelæ, perspicuæ, ad marginem haud productæ. *Sori* uniseriati, oblongi, ad venas terminales, inter costam et marginem mediales.

MADAGASCAR. Forest of Ambohimombo, province of Tanala, *Forsyth Major*, 185.

598. *Polypodium* (*Eupolypodium*) *forsythianum*, *Baker* [Filices-Polypodiaceæ]; ad *P. khasyanum*, Hook., arcte accedit.

*Rhizoma* breviter repens. *Stipites* cæspitosi, brevissimi, paleis subulatis patulis brunneis vestiti. *Fronde*s lanceolatæ, subcoriaceæ, elasticæ, 2–2½ poll. longæ, medio 5–6 lin. latæ, basin versus sensim angustatæ, utrinque virides, paleis subulatis brunneis patulis tenuiter vestitæ, ad alam costularem angustam pinnatifidæ. *Pinnæ* lineares, obtusæ, integræ, erecto-patentes, basi confluentes, centrales  $\frac{1}{2}$  lin. latæ; venæ immersæ, occultæ, erecto-patentes, bifurcatæ. *Sori* globosi, superficiales, inter costam et marginem pinnarum uniseriati.

MADAGASCAR. Forest of Ambohimombo, province of Tanala, alt. 1450–1560 ft., *Forsyth Major*, 200.

599. *Acrostichum* (*Elaphoglossum*) *subsessile*, *Baker* [Filices-Polypodiaceæ]; ad *A. flaccidum*, Fée, arcte accedit.

*Rhizoma* breviter repens, paleis parvis lanceolatis brevibus castaneis. *Fronde*s *steriles* contiguæ, subsessiles vel breviter stipitatæ, lanceolatæ, subpedales, medio 9–12 lin. latæ, rigide coriaceæ, nudæ, e medio ad apicem acutum et basin sensim angustatæ; venæ laxæ, erecto-patentes, perspicuæ, simplices vel furcatæ. *Fronde*s *fertiles* ignotæ.

MADAGASCAR. Forest of Ambohimombo, province of Tanala, *Forsyth Major*, 204.

## MISCELLANEOUS NOTES.

KING OF SIAM.—A private visit to the Royal Gardens was paid on the morning of Sunday, August 1st, by H.M. the King of Siam.

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Botanical Magazine for July.—The number opens with a figure of *Zamia obliqua*, which has been in cultivation at Kew since 1880, when a plant was procured from Mr. Bull, of Chelsea. It is native of New Grenada. *Cattleya elongata*, the beautiful *Polygonum baldschuanicum* (the flowers of which are coloured too pink), *Helianthus tuberosus*, and *Lissochilus milanjanus* are also figured. The *Cattleya* is a handsome species from Brazil with large flowers having orange-coloured sepals and petals and rose-coloured labellum. It flowered at Kew in October, 1893. The *Polygonum*, native of Bokhara, is a valuable addition to the number of good hardy climbers. The Kew plant was received from the Jardin des Plantes, Paris. The specimen of the wild form of *Helianthus tuberosus*, was furnished by the Rev. C. Wolley Dod, who had grown it from indigenous tubers. The plate is accompanied by many interesting facts relating to the plant's history. The *Lissochilus* is, as its specific name implies, native of Central Africa. The flowers figured were sent to Kew by Mr. P. F. Garnett, of South Bank, Liverpool, while the bulb and leaves were drawn from a Kew plant which was received from the late Mr. John Buchanan.

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Botanical Magazine for August.—The following plants are figured :—*Lycoris squamigera*, *Gasteria fusco-punctata*, *Dendrobium denudans*, *Ficus erecta*, var. *Sieboldii* and *Cynorchis murpurascens*—all from specimens cultivated at Kew. *Lycoris squamigera*, a native of China and Japan, is interesting as a showy plant used by the people of the latter country to decorate their cemeteries. *Gasteria fusco-punctata* is conspicuous for its much-branched inflorescence. *Dendrobium denudans* is a slender epiphyte of the Himalayas, whence specimens collected off oak-trees were sent to Kew by J. F. Duthie, Esq., and flowered in 1896. *Ficus erecta*, var. *Sieboldii* was sent to Kew by the late Dr. Schomburgk ; it is a native of Eastern Asia. The last figure is that of a Mascarene orchid with an extremely complicated flower : like the majority of the orchids of that region it is of terrestrial habit.

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New Edition of Key Plan.—A fourth edition of this skeleton guide to the Royal Gardens was put on sale during the month of August. It has been carefully revised so as to include all recent improvements. The size has been somewhat reduced so as to make it more convenient for the pocket. The printing leaves something to desire in the matter of clearness, a rougher paper having been unfortunately used by the Stationery Office.



**Water Lily Pond.**—South of the lake in the Pinetum is a small pond which has long been dry. The bottom has now been puddled with clay and made water-tight. It is supplied with condensed water from the steam-engines at the waterworks. As the temperature of this is fairly warm it is hoped by this means to be able to cultivate in the open air many tender aquatics. This has already proved successful with the red *Nymphaea Lotus*, of India, and with *Thalia dealbata* and some other plants. It is intended also to plant out the fine coloured water lilies raised by Mons. Latour-Marliac, which are an addition to modern open-air gardening, as notable as they are delightful.

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**Tampico Jalap.**—Ordinary Jalap, the “Purgo macho” of the Mexicans, is widely known as a medicinal substance, and the plant (*Ipomoea Purga*, Hayne), with purplish-pink flowers, is met with under cultivation not only in greenhouses in Europe, but to some extent as a field crop in the neighbourhood of the Cinchona Plantations, in the Nilgiris (Madras), and the Blue Mountains, Jamaica. Tampico Jalap, on the other hand, which has made its appearance in trade of recent years in considerable quantity, is produced by a different plant (*Ipomoea simulans*, Hanbury). It is stated to grow along the mountain ranges of the Sierra Gorda, in the neighbourhood of St. Luis de la Paz, from which town and the adjacent villages the roots are carried to Tampico, and thence shipped abroad. As Tampico Jalap was not represented amongst the plants in the Economic Collections at Kew, an effort was made to obtain a few tubers through the Foreign Office, who enlisted the kind co-operation of Her Majesty’s Minister in Mexico. In November last, two lots of tubers were received in excellent condition from Her Majesty’s Consul at Vera Cruz, labelled respectively “Tlacolulam” and “Tonayan,” and described as having been obtained from these localities, “in the canton of Jalapa, in the state of Vera Cruz.” The Tlacolulam tubers were distributed to the botanical departments at Jamaica and the Nilgiris, and to the botanic gardens at Oxford, Cambridge, Edinburgh, Glasgow, Glasnevin, and Trinity College, Dublin. The Tonayan tubers (a small lot) were distributed to Jamaica and the Nilgiris only. It was at once noticed that both these tubers were not obtained from the locality where Tampico Jalap is collected, and now there is little doubt that they are ordinary Jalap (*Ipomoea Purga*). This fact should be carefully noted by the recipients. In the meantime another effort is being made to obtain the tubers of the true Tampico Jalap

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